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NEW LAND

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By FRIDTJOF NANSEN.

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**THE NORWEGIAN NORTH POLAR
EXPEDITION, 1893-1896.**

Scientific Results.

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LONDON, NEW YORK, AND BOMBAY.

NEW LAND

FOUR YEARS IN THE ARCTIC REGIONS

BY

OTTO SVERDRUP

TRANSLATED FROM THE NORWEGIAN

BY

ETHEL HARRIET HEARN

WITH ILLUSTRATIONS AND MAPS

IN TWO VOLUMES

VOL. II.

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NEW LAND

CHAPTER I.

ISACHSEN RELATES.

ON June 19 Isachsen and Hassel returned on board, and the following is a brief account of their journey written by the former :—

‘On the morning of Easter Monday, April 16, just as we were about to start, a glimpse of land was discovered in the west ; and after a short consultation it was decided that Hassel and I should cross over to this “new land,” return thence to Cape Levvel, and then try to gain some knowledge of the land south and west.

‘After a short “good-bye, and a prosperous journey,” the Captain and Fosheim drove off northward. They disappeared at once from sight in the hummocky ice, and we then set to work to redistribute the loads on our sledges, taking with us provisions for a fortnight. The rest we cached in a snow-drift, and put up a mark. We did not think we were risking very much by doing this, as we had never seen any bear-tracks north of Cape South-West.

‘The faint glimpse of land in the west which we had seen in the morning at once disappeared from sight in the misty atmosphere, and shortly afterwards “Cape Levvel” behind us. For our guidance, therefore, we had only the chronometer, and the sun which shone on us every now and then. The shape of the drifts, which are conditioned by the prevailing direction of the winds, are also of some help, but the compass alone cannot be depended on in these regions. Early in the day we again managed to break the hand of the odometer in the rugged ice, but after that we got out on to largish old floes with high drifts.

‘During the following days we saw nothing of land, until the evening of April 20, when it cleared, and we saw that we were near the ice-foot, and that this was bounded by a high barrier of ice.

‘The direction of the coast here was north-west by south-west. We followed the ice southward. Inside our course was a large expanse of sand, behind which the land rose at a gentle gradient, with higher ground north and south, though nothing that we could see exceeded a height of about 900 feet. The



CAMP BY THE ICE-FOOT.

country was uniformly covered with snow, except for bare patches here and there where the ground fell away rather more abruptly. On these there was a good deal of moss and lichen, but of the vegetation on the whole it was difficult to form any opinion, as there was a great deal of snow on the places where it might be expected to be most luxuriant. Nor was it easy to get near the mountains for the purpose of taking specimens of the rock.

‘According to arrangement, we drove back to Cape Levvel, and arrived there on April 28. We had high wind from the south-east

for three days. On the 25th it went over to the north-west, with snow.

‘Weather such as this is very trying for the dogs. “Vesla” had four puppies, which “went to the dogs,” and “Gamml’n,” poor fellow, we were obliged to shoot. He had always been rather weakly, and was now at the end of his forces, and besides he was not a young dog. The following morning there was nothing left of him but a few tufts of hair, his comrades having demolished the rest.

‘After leaving a letter for the Captain at Cape Levvel, at the spot we had agreed on, we drove south with a fresh north-west gale behind us, turning eastward at Cape South-West on May 2. As soon as we had passed the cape the wind went down and it became calm and sunshiny. This beautiful sunshine was especially welcome, and we at once made the most of it by turning our sleeping-bags inside out and letting them dry in it. The effects of the wet bag had shown themselves in various ways, one being that Hassel dreamed one night that he was on board, had been put on the capstan, and all hands were standing round, each playing on him with a hose.

‘The land here was of a quite different character from that west. Instead of an undulating surface and low hills, there were here steep precipices and heights rising to about 5000 feet. Here and there a glacier protruded, and they seemed—at any rate as far as the more southern ones were concerned—to issue from a central ice-cap, and seldom reached the coast. Whereas, also, the mountains between Cape Levvel and Cape South-West fell fairly abruptly into the sea, there was here on the south coast a considerable amount of underland, and less sharply defined transitions in the outlines of the mountains. The coast-line was also less indented than that of the west coast.

‘The snow on Norskebugten was deep, loose, and unusually heavy. On May 6 we passed Hyperitodden, round which point we saw the tracks of numerous bears. No sooner had we begun to drive across it than a north wind sprang up in our teeth. We camped in the middle of “Ulvefjord” (Wolf Fjord), as it was afterwards called. East of us we saw the snow being blown out

from another inlet. The land between the inlets seemed to be two islands; but this, we concluded, we should find out for certain when we came to drive along the east side of the aforesaid land.

‘As the wind and drift grew still worse during the following days, we were obliged to remain where we were and wait—we simply *had* to see now.

‘At the time we had parted from the homeward-bound detachment, on March 31, we had been provisioned for fifty days, while the bear we had shot had provided us with food for another six days. Twelve days, we thought, must be allowed to drive from our present camping-place to Björneborg. The way overland would also take time, so that according to our calculations we could not continue our onward course for more than three days longer, though if we came across game we might still continue for a while. It would be very annoying if we were obliged to turn south now that we stood on the very threshold of the promised land.

‘On May 8 we drove north, up the eastern inlet, at first following the shore, until we had passed a low neck of land. We now saw that the southern hill was not an island, as we had thought. Some distance to the north there appeared to be a largish island in the midst of the fjord, and on about the western end of this we shaped our course. During these days the odometer was broken for the third time. I put it to rights again, but the rod was now so short that, practically speaking, it was useless. The weather at this time was particularly trying for the eyes, the atmosphere and the snow being both of the same grey tone; for this reason also we had great difficulty in seeing what the ice was like ahead of us. The mountains on this west side were unusually high, especially those nearest the coast; on the east side they were of less height.

‘We saw some heather, and the excrements of polar oxen and hares which had been blown hither and thither about the ice, and we therefore scanned the country eagerly for game. After we had passed the second fjord on this west side we saw two dark spots up on the talus, and shortly afterwards I noticed that they moved.

They were polar oxen. I was not long in getting out my carbine and starting after them, but the animals moved away, and I therefore shouted to Hassel to set the dogs on them. The animals—they were a bull and a cow with its calf—had meanwhile formed up on a large knoll which it was very difficult to reach, as there was some hard steep snow below it. The dogs and I arrived there at the same moment. I crawled on my hands and knees, in the track of the animals, to the top of the snow slope, where they stood defiantly, with lowered heads, snorting and pawing up the ground with their fore-legs. They looked very formidable, but I had no time for reflection, and fired at the cow from where I stood. The bull immediately charged me, but two shots—one at four or five paces—brought it rolling to my feet.

‘The calf, which I had not hitherto noticed, as it had hidden itself in the long hair of the cow, had been attacked by the dogs, and I had a skirmish with them before I could prevent them from worrying it to death. It is with a curious sensation that one stands face to face with these animals; their appearance and environment carry one’s thoughts back to a time long past.

‘We rolled them down the snow slope and opened them, after first milking the cow. The dogs had one animal all to themselves; we harnessed all twelve to the other and drove it, on the skin, down the snow-slopes to the sledges on the ice. We now had what we had so often longed for—black puddings to our hearts’ content. “There’s many a one goes begging at home who hasn’t such food as this,” said Hassel, as usual when he wished to express his appreciation of the fare. Furthermore, we had a nip in the shape of a tablespoonful of brandy, and did not get into our bag before the small hours of the morning.

‘We saw a fjord next day extending in an easterly direction, and as it was important to discover for certain whether this was the same fjord that Braskerud and I had seen from the glacier in 1899, we decided to drive up it, and then follow its east side southwards. The country north became lower and lower as we went on, and appeared to be continuous on both sides. Through the telescope we could follow a pressure-ridge on the outer side of the fjord, which we thought probably indicated the trend of the coast-line.

‘Unfortunately, there was no time to investigate this further. It was now the middle of May, the time when, probably, there would be open water in Hell Gate. Nor were we successful in getting the necessary observations in the eastern fjord, as it snowed almost continuously from the 13th to the 19th of May. On the latter day there was a snowstorm from the south-east. We dug ourselves down till only the ridge of the tent was above the snow, but even then I hardly expected the tent to hold.

‘Earlier the same day we had driven across a lane into which “Storebron” and “Skelettet” had fallen. This, in conjunction with the subsequent bad weather, had such an effect on “Skelettet,” that to our regret we were obliged to shoot him.

‘On May 21 we had another polar-ox hunt. We realized on this occasion how difficult it is to distinguish between an ox which is lying down and a stone with snow or lichen on it, the light patch on the animal’s back being particularly deceptive. It was very curious to see one of the oxen take up and toss a calf into the air, evidently under the impression that it was a dog. It came down bellowing, with stiffened legs.

‘As we were almost out of biscuit, it occurred to us to try the contents of the paunch as a binding ingredient for the traditional black puddings. Directly I tasted it I found out how horrible was the compound, but I thought it incumbent on me to say something in its praise to prevent it being at a discount. But when I saw dissimulation was absolutely of no avail, I asked Hassel what he thought of it. “I think it tastes something like cow-dung,” he answered.

‘On May 28 we were again at Norskebugten. It was very apparent that spring-time was near. Now and then a gull, or a skua, flew screaming past on its way north for the summer. We now drove at night, on account of the going, which was of the worst description. The snow at this time was at freezing-point on the surface, while lower down it was considerably colder, a state of affairs which causes ice to form under the sledge-runners. We had to give up cooking our food at this time, as we had used all the paraffin. Hassel called out solemnly as he was

pouring the last of the oil into the cooker: "This is the last 'Primus,' Isachsen!" "All right," I answered, "we shan't die as long as we have raw meat and dog-food." Our great difficulty was to get a sufficient quantity of drinking-water, and in order to melt it we had to make use of physical warmth. Our meals had one advantage, however, inasmuch as they were easy to prepare. Later on, when on board, I was incautious enough to remark that dog-food tasted good, and ever after that a kindly soul placed a dole at my place at table on festive occasions.

'On June 3—Whit Sunday—at midnight, I saw a big bear rounding Björnekap and coming towards us. As it was coming down wind, it was to be expected that it would soon bear off to get scent of us. It was therefore necessary to prevent this, and *we* accordingly luffed. But then it gave up the idea and headed straight for us, and it was not long before bear and dogs were circling round each other. The bear sat himself down on his haunches and hit out valiantly, right and left, but a couple of bullets soon put an end to this. I had to walk close up to it before I dared shoot, as the dogs were so in my way. The "white 'un," however, was considerably injured. It had flung itself ten or fifteen paces away, and there lay moaning. It proved that its backbone was broken, and the hind-quarters entirely paralyzed. I had to give it another shot.

'We had now some blubber for fuel, and we ate that evening both long and well. What the dogs can put away on such occasions is something incredible; bear's-liver, however, they are not much addicted to, and those that eat it generally suffer for it. "Storebron," who was young and inexperienced, had thus to part with his again.

'As there was only open water and no ice farther south in the sound, we had to strike overland from here. We drove up to a height of about 500 ft., found a breach in the mountains, through which we passed, and came down to Gaasefjord, close by our last winter quarters.

'On June 13 we reached Björneborg. Here, contrary to our expectations, we found no people, but two dogs: "Fischer" and "Turisten," both as fat as butter. The mate had set them on a

bear on May 10, since when they had been missing. They had lived well, however, doubtless by cheating the bears of their food, by driving them away from seals and the like. Plenty of food had been left at Björneborg, and as we had hardly tasted bread for the last month we found it especially delicious.



AN EXCURSION IN HAVNEFJORD, 1900.

‘As little work had hitherto been expended on the route between here and the “Fram,” we gave up the next few days to this, and arrived on board on June 19, black and dirty, just as the “Fram” folk were being called to “the plenty” breakfast.’*

* The steward’s English expression for everything big or fine.

CHAPTER II.

SUMMER JOURNEYS AND FERTILITY.

BAUMANN and Schei came back on June 20. They had left the 'Fram' in company with Simmons and Stolz on June 5, at seven in the evening. The going was now considerably better at night than during the daytime, and it was often found preferable to drive at night.

On June 7 Simmons and Stolz had taken a line for Baadsfjord, while the two others continued west and reached Björneborg late that afternoon, where they found Fosheim in good health and spirits.

The sloping roof was finished, the tent was now watertight and comfortable, and the tin boxes had gone into the reserve. The game captured had at first been little, as the weather was so bad; but on the same day that Baumann and Schei arrived Fosheim had shot a bearded seal and two bears, which had come to visit him in company, so he had nothing to complain of that day. He was in the midst of skinning the bears when the party arrived.

He was unfortunate enough during this process to cut one of his fingers. As a wound it was nothing to speak of, and at first he took no notice of it, little thinking what a serious affair it was going to turn out. The finger developed what among whale-catchers is known as an 'Arctic Ocean fester.' This, as far as I know, is a local blood-poisoning, which is generally caused by handling blubber when one has a cut or scratch on the hand, so small perhaps that one has not even noticed it. In my experience blubber is one of the most dangerous things that can be touched in such circumstances, and many a stout whale-catcher has had to lay down his life for a trifle of the kind. The only way of making

sure that no harm is likely to happen, when one has a wound of the sort, is to wash it continually with some disinfectant, such as carbolic water.

Fosheim suffered from his finger the whole of the summer, and it was a great trouble to him, for he was quite unfit for work. When a finger gets into the state that his did there is nothing to be done but lance it time after time. Failure to do this will cause the arm to swell and be painful for a long way up. But the incision must be made to the very bone, or it will be of no use. This is not a thing one feels very much inclined to do, but it is absolutely necessary, as I have had opportunities of observing. Simmons lanced Fosheim's finger several times without our noticing any great improvement. Then, one day, I cut a long gash in it down to the bone, and that was the last time it was lanced.

When Baumann and Schei arrived at Björneborg Fosheim was still alone, and it was decided that all three should return the next day. Their first camp was at Ytre Eide (Outer Isthmus), where Baumann took some observations.

The day afterwards they drove into Hvalrosfjord, took a line across Indre Eide (Inner Isthmus), and camped at the head of the fjord, near a river. The snow was soft and slushy, and also at times deep and granular, making it difficult for the dogs to get along. Baumann was again able to take observations in here.

While Schei was gone on a geological excursion up the valley, Fosheim and Baumann, in the afternoon, went shooting. They killed two polar oxen from a herd which numbered half a score of animals, and in addition to these shot a quantity of geese. They had seen geese on their first day's march, probably the first of the year, but this western fjord and valley were positively teeming with them; so the name of 'Gaasefjord' is borne by the inlet with every show of right. The teams were taken up to be fed next day, with one sledge only, to the place where the oxen were lying.

At six in the morning of June 12 Baumann and Fosheim started north to Land's End, with one sledge and two teams. Schei remained at the camp, where he had several things to do.

Progress up the valley was exceedingly slow; in many places there was not enough snow, and the streams were so swollen that frequently they could only be crossed with difficulty. The courses of the streams were the places where there was most snow, and up these they were obliged to drive for long distances together. In the end, however, they got across the neck of land and down to the sea-ice on the north side, and this they followed till they reached Land's End.

Soon after they had passed the watershed they observed two polar oxen on a slope some distance away. It was their intention to pass them without an attempt at pursuit, as time did not allow of any digressions; but my dogs, which Fosheim had with him as a loose team, got scent of the animals, and became perfectly unmanageable. Away they ran, up the hillside, as hard as they could go, and although the men tried to call them in, it was absolutely in vain. There was nothing for it—they were obliged to shoot both animals before they could continue the journey.

They saw no traces of Isachsen and Hassel. At Land's End they built a cairn, and placed under it another description and sketch-map of the way across the mountains, and then settled down for the night. They had no bag with them, and the weather grew very bad, rain and sleet falling alternately.

While they were cooking supper they noticed a bear down by the crack which was inquisitively watching their movements, wondering apparently what kind of animals they could be. It moved from hummock to hummock, stood up on its hind-legs to get a better view, while its body rocked backwards and forwards, and its neck was outstretched as it sniffed the air and wriggled its nose from side to side; but it advanced no nearer, and the dogs did not wind it. Baumann and Fosheim were very glad when it slunk off, after a while, for they had a superabundance of meat and few cartridges left, indeed, not more than five or six altogether.

Next day they started homewards. The going on the sea-ice was about as before; but bad as progress had been overland when they drove north, it was now ten times worse. Except in the river-beds there was no snow whatever, and in them the

freshets were thundering down, and crested waves were on almost every stream. Had there been snow on the ground the country would have been easy enough to travel in, but as things were it was exceedingly difficult.

At last they succeeded in getting up on to the neck of land, and took with them four joints of beef and two skins, the two last-shot animals not having been flayed. In course of time they got back to camp again, though in very bad weather. It was after this

*Simmons.**Bay.**Fosheim.**Raanes.**Lindström.*

SUMMER ON BOARD.

journey that the fjord received its name of 'Gaasefjord,' for they saw geese nearly everywhere in the valley and in the inner part of the fjord, as far out as 'Middagskollen' (Noonday Hill)—as we came later on, when we took up our winter quarters in the fjord, to designate a height on a projecting point, about five miles from the head of the fjord.

It is a pretty spot in there, round the head of Gaasefjord, and the geese were not at all so stupid when they discovered it, and its adjacent valleys. The main valley, from the head of the fjord

up to the watershed, was broad and flat, with so little rise in the ground that for the first five miles it was hardly appreciable. Farther up the gradient was slightly steeper, but not much. Large continuous expanses of grass provided in places abundant pasturage for big game, and, as a matter of fact, they had already seen a few reindeer on the north side of the neck of land.

The day after their return from Land's End, June 15, camp was struck, and about five in the morning all three drove out of the fjord. The snow had almost entirely melted on the ice outside Middagskollen, and the water not yet having had time to cut a way through it, was standing fairly deep on the ice, with the result that they drove all the time through sludge and slush. Later in the day they had rain and sleet again in superabundance, and when they camped in the outer part of the fjord were all thoroughly wet through; but this did not matter so much now that they had a tent. The two skins which they had brought with them were pressed into service, the tent soon became warm and comfortable, and it was not long before they forgot the rain and the pools on the ice outside.

Next morning they awoke to find a snowstorm from the southwest shaking and rattling at the tent. As there was nothing which made it necessary for them to hurry on in such weather they lay-to for a day, and did not start back to Björneborg till June 17, by which time matters had improved.

At Björneborg they found a letter from Isachsen and Hassel, saying that they had been there and had gone on to the 'Fram,' taking with them part of the depot. Baumann and Fosheim had nothing more to do there at that time, and so the following day they continued homewards with the last remains of the depot, arriving on board, on June 20, with their dogs somewhat footsore.

The same day that the Björneborg folk arrived, Simmons, Bay, and I went a trip down the fjord to Stordalen; Simmons to collect plants, Bay to pursue insects. The bag was poor, all we found being some sandpiper's eggs. On the way back we met first Schei, whose dogs, in spite of being footsore, were the most willing to work, and a little way behind him the others. They had seen a couple of channels, about a yard wide, out by the rocks.

When Bay heard this he at once made up his mind to go out and dredge, which he accordingly did the day afterwards, and I went with him; but the chief result was the certain discovery that the bottom was unsuitable for dredging purposes.

The party from the west told us that it was far more summer-like there than in Hvalrosfjord. We had had a bad-weather relapse in our part of the country. It was chilly, and there had been several recent falls of snow, though this, of course, was not serious in itself, as it was early in the year, and we might still hope for a fine summer. On June 22 Simmons, with Olsen, went into Sydkapfjord to botanize, but they returned a couple of days later, which was sooner than Simmons intended, having done very little. There was still a great deal of snow in the fjord, and even where it had vanished they could discern hardly a trace of vegetation. Sydkapfjord, according to our experience, was one of the most barren fjords on the whole south side of the country.

At first, after their return, Baumann and Isachsen were occupied in working out some of their observations, a lengthy business, which, if it is to be of any use, must be done with the greatest accuracy.

In addition to his observations, Baumann had also the year's consumption of victuals to make out. To our joy it proved that we had used considerably less of the various food stuffs than the previous year, and in this respect we were therefore quite on the safe side. But Baumann's work did not end here. First and foremost were the magnetic observations, which were an important duty on fine days; new sails for the main rigging had also to be made, ready for use in the autumn, when we should go out to Jones Sound. Baumann undertook to draw and cut them out, and afterwards helped the mate to sew them.

It is at this time of the year that the seals begin to bask on the ice. We tried a shot at them now and again out on the fjords, and had very fair luck, so that, apart from the meat we had still remaining from the winter, we soon acquired a good supply of fresh meat for the dogs, and quite sufficient to last through the summer.

Simmons had long talked of a botanizing trip he wished to

make to one of the western fjords. He had heard so much of the vigorous herbage in the west that he hoped for a rich harvest out there. Bay was no less anxious to be off. Besides the insects, he was determined to become the possessor of the skeleton of a really fine polar ox. It was decided, therefore, that Simmons, Bay, and Isachsen should join company, and on June 28 they all three left the ship.

Schei had long had his eye on the glacier at the head of Havnefjord, which he was anxious to survey, and at the same time to make a more thorough examination of the mountains behind it. On July 2, therefore, he and I set off for the head of the fjord.

We had had fine weather the last few days, and, practically speaking, the country was now free of snow. The streams and rivers foamed wanton and wild over the cliffs and precipices, and we could hear the roar of the water a long way off. In some places, where the decline was slight and the valley broad, the river would roll quietly and solemnly along, as if deeply pondering the dark riddles of existence; then suddenly would forget all its philosophy and make a couple of joyous leaps out over the precipice, the foam glittering like silver filigree in the sunshine.

The fjord-ice had suffered much these warm days, and presented a sorry spectacle—pool after pool all the way up the fjord; but for the seals it was a glorious time; they lay scattered about in numbers, basking in the summer sunshine.

We camped on the east side of the big river which comes down just at the head of the fjord. Outside the mouth was a large lane, where the greatest commotion was going on among the eiders, black guillemots, and gulls; their clamour was absolutely distracting. We tried shooting some, but they were wild, and it was difficult to come within gunshot. Well, well, we gave them up, but hares there must be, somewhere about, for when we peeped into the fjord the previous year we saw them in numbers. But no—there was not a hare to be seen! Our astonishment was boundless.

And the geese on which we had pinned our faith if all else should fail? Not so much as a feather! This was no goose

country, it appeared. More thoroughly disappointed than we were a pursuer of game could hardly be.

Early next morning we set forth up the valley, where Schei did the work he wanted to do. After we returned to camp we managed to shoot a few eiders; but they were shy, as I said before, and difficult to come within range of; and even when they allowed us to do this it was not easy to get them ashore. We had either to wait till they drifted to the edge of the ice with the current, or



SUMMER.

else—which we did several times—wade out after them. We were equipped with waterproof trousers, and went out till the water came up to the calves of our legs, but there we drew the line. I was particularly well situated in this respect, for I had some Kerseymere trousers, which I tied firmly round my ankles, and they were very fairly watertight. Another of their virtues was the impossibility of wearing them out, and I came to regard them with a sort of superstition, and felt very small in them one day when I found that they had at last sprung a leak.

The following day we moved our camp across the fjord to a

place where it had been the previous autumn. It was not a long drive, not more than a couple of miles perhaps, but it was bad enough all the same. For one thing, the dogs were most dreadfully footsore, and for another, my team took it into their heads to go out to every pool of water we came near. The deeper the pools the better they liked them, for then they could swim and save their feet. I used my whip till my arm ached. Where they got it they felt it, that I will guarantee; but, all the same, they went exactly where they chose; and Schei's dogs, of course, followed mine—that was only natural.

I will not deny that this water-cure did the dogs good, but it did not agree so well with the loads. All our things were saturated—cameras, guns, sleeping-bags, all were as if they had been fished out of a stream; and so they were, in a way, for they had to be dragged up from the lanes. Well, well, it was good drying weather at the time, so it was no great matter, but the photograph plates were spoiled, one and all.

Nor was there a single hare to be seen here either. We now went west, up the mountain-sides, until we could see down into Sydkapfjord, but when a raw fog set in later in the day we thought it wiser to turn back.

We discovered, while on the mountains, the track of a bear, which apparently had taken a trip ashore during the course of the spring. Most likely it had come from Sydkapfjord; it had crossed the mountains and gone down to the inner part of Havnefjord. The remarkable thing about this ramble was that, after descending on the other side, it had not taken to the ice, but had followed land all the way inwards, and had then gone up the valley. Where he had finally betaken himself to it is difficult to say, but it was plain he must have been a land-lubber, for he had kept to dry land the whole time.

After a few days Schei finished his work, and we then drove out to the 'Fram' again. We had meant to shape our course on the east side of a little island which there was out there, but were stopped by open water, and had to go all the way back, for, from the big river which ran out into the fjord east of the island and right across to the latter, the fjord lay open and blue.

We knew, of course, that when once the sun begins to be powerful here in the north, shining by day and by night, the snow vanishes like dew, and the transformation from winter to summer takes place as if by magic. But this went beyond the bounds of the conceivable. On our way inwards we had hardly seen the sign of a lane outside the river, and now a lane had eaten its way right across the fjord, and was nearly a mile in breadth! But under the ice, as well as above it, forces had been at work. Beneath the ice, eating it away, ran the water from the river, warmer and warmer with every day that passed. Even out at the 'Fram's' moorings the fresh water registered ten or twelve degrees of warmth, though the river there came straight from lakes where the ice never entirely melted, and its course was so steep and swift and deep that it was little affected by the sunshine. In here, on the contrary, the river ran for a long way through bare land with gentle slopes, part of it even over flat, sandy soil, and always exposed to the rays of the sun. A large fund of warmth must have accumulated here, which was necessarily greater than in the other case, and which worked with almost violent force.

As aforesaid, we retraced our steps, drove across the 'val,' or little isthmus, submerged at high water, on the west side of the island, and in time reached the 'Fram.' We brought back rain and sleet with us. Happily the bad weather did not last long this time, and we soon had the same brilliant sunshine as before.

On board everything was going its even way. Baumann and the mate were busy on the mainsail. The main rigging was complete, and so trim that it was a pleasure to look at it. Fosheim, poor fellow, was in a bad way. His finger was still painful, and made him unfit for work. Once or twice, when he could stand it no longer, he went out seal-shooting, but even this he found difficult, for he had to carry his hand in a sling, and to steal unawares on a seal, especially with the stalking-sail, was almost an impossibility. He had done previous service as ship's carpenter, and as we were obliged to have one, and all the others had their appointed work, I now took this task upon myself. Our main boom had been entirely burned, and as we were now turning the old spare boom into the main boom, we had to have a new spare boom in

its place. We also required a new peak for the mainsail, and this, too, I undertook to make. The smithy had been moved ashore, near the river, and Nödtvedt, with Stolz as striker, stood there hammering day in and day out. Among other things, the funnel was in want of repairs, and hoops had to be made for the new spars, etc.

But not only was blacksmith's work done in the shed. It was also used as a wash-house, being handy for the river; and we had only to draw the water straight from it. Each man had his



THE DREDGING-BOAT UNDER SAIL.

washing-day in turn. It may possibly be thought that blacksmith's work and washing in the same shed were occupations not likely to harmonize, but it must be remembered that it was not fine linen that was being washed; while the conditions of life up there were so peaceful that it would have been difficult for us to come to loggerheads over a laundry and mangle, as is sometimes the case between the housewives in our flats at home. As a rule we waited to do our washing until the blacksmith had finished for the day, and then the kettle sat in state on the forge, the soap-suds foamed, and we paid a tribute to the virtue of cleanliness. We never did get

in each other's way, either here or anywhere else; the one gave place and the other took possession, according as room was required.

As in our former harbour, so again here, we had our outlook, which we called 'Kringsjaa,' and visited it daily in our pursuit of lanes out in the ice in Jones Sound. It was on a high hill immediately above the vessel's moorings, and there, too, a little distance from the edge, Baumann took his meteorological observations, and, later in the summer, Isachsen also. On clear days they were often so busy that they would not come down for dinner, which was consequently sent up to them.

Like the forge, our four-footed friends had also migrated from the ice, and were now chained up near the river. There they lay basking in the sunshine, panting and making such a noise that we could actually hear them on board, more than a couple of hundred yards away. Not all the dogs, however, were down by the river. Three or four of the bitches, which were about to do their duty as citizens, were placed near the observatory for shelter, and it was not long before they each had a family of eight or ten puppies. But the lying-in hospital was visited by others who were in the less fortunate position of neither having nor expecting any puppies; and what did they there? Why, they stole the puppies whenever they got the chance; especially from those which had the largest litters. When they had got possession of one of the pretty little pups, they would lie—if they were allowed to—licking it and keeping it warm all day long.

Among the proud mothers was one named 'Silden,' or more correctly 'Silla.' It might be thought she would have been happy, considering the large number of her offspring, but she was not happy enough, and was always on the alert to kidnap a few more pups, which she nursed with the same motherly tenderness that she did her own. By degrees, as the puppies all grew bigger, and their mothers began to go small excursions, she took possession of the whole pack of little ones, and it was not till they were all crawling over her and round her, like ants in an anthill, that she appeared to be thoroughly happy. We crammed her with as much food as she could possibly eat, but she became so deplorably thin, that she could hardly hold together.

If ever a dog deserved the name of 'Silla' (the Herring), it was this one.

On July 15 Bay, Simmons, and Isachsen came back from their trip to Moskusfjord. The going had been slushy the whole way, especially on the return journey. They would all have liked to prolong their trip as far as Gaasefjord, but the ice westward began to be so bad that they thought it would be unwise, and therefore contented themselves by driving into Moskusfjord. I, for my part, think they might expect just as good results here as in Gaase

*Fosheim.**Baumann.*

AT THE HEAD OF GAASEFJORD.

fjord, and am of opinion that they did right to confine their trip to Moskusfjord. When they entered this fjord they found that there were already large lanes outside the mouths of the rivers, but this was hardly surprising, as the volume of water entering the fjord in this manner was considerable, especially from the river in the main valley; besides which the rivers were in flood. They camped south of the most western of the rivers issuing at the head of the fjord. It was so swollen that it was impossible to cross it.

Suddenly they caught sight of three polar oxen grazing on the

other side. Here was a chance for Bay, who was resolved on possessing a skeleton. He was determined to cross the river at any price, and started off to make the attempt. First he went up stream, but the gradient was so steep that the river rushed out in a fall to a depth that made wading impossible. Then he tried down stream, at a spot where the river spread itself out over a large expanse of sand below the slopes. Although both deep and swift, it was not quite so impossible here as farther up, but as a set-off it was several hundred yards wide. Bay, however, was quite in his element, and liked nothing so well as a good wade in ice-cold water; and certainly there was as much of it here as he could possibly desire.

He set out, provided with gun, ammunition, flaying-knife, and a long stick by way of support. But even for Bay it was not an easy matter, and it was as much as he could do to get across. The water reached to his middle, and carried him some little distance down stream, but across he meant to go, and across he eventually got. The next thing was the pursuit of the oxen. At first he had cover, and advanced cautiously towards a boulder a little way up the bank, and within very fair range of the animals. After a good deal of trouble he reached the boulder, and prepared for an attack.

Suddenly one of the oxen caught sight of him, and came stealthily snuffing down to examine this curious phenomenon. Bay took steady aim, and let blaze. He hit his mark of course, but the ox was not to be daunted by such a trifle, and continued its way, with the difference only that it increased its pace, and set a course straight on Bay.

Bay is one of those lucky people who never grow nervous and shaky because an all-important moment is at hand. He lay still where he was, and shot as quickly as his 'Buchsfinte' would allow of it. According to his account he aimed true each time, but the ox was quite as undisturbed and steady as the man behind the stone. To the onlookers things seemed to be getting pretty serious. Nearer and nearer came the ox, at a steady pace, and Bay apparently fired into it time after time. Not a shot seemed to take effect, and he had to confess later that he had found his match. It was not till the animal was within a few paces of the



A COMPULSORY HALT.

stone that at last it received a shot which brought it to the ground. The two other animals took up a position of defence on a sand-hill a little higher up, but as the enemy showed no signs of attacking they retired farther up the valley, and were seen there grazing later in the day.

Meanwhile Bay set to work to skin and skeletonize the ox he had shot. The weather was fine, and his operations were performed without difficulty, the only question being how the meat was to be conveyed across to the other side of the river. After some search a place was found rather higher up where the river narrowed into some rapids between perpendicular walls of rock. The width was not so great but it was possible to throw a rope across, and by this means most of the meat and the skeleton were brought across in safety; but though the arrangement answered perfectly, Bay managed to find several opportunities of wading backwards and forwards across the river.

While Bay was occupied skinning and skeletonizing his animal, Simmons and Isachsen walked up the main valley westward to a spot where the valleys diverged. There they climbed up some higher ground to get a view, and used their glasses diligently. As they were sitting scanning the country a large animal suddenly entered Simmons's range of vision, and after a moment's hesitation, he exclaimed, 'Why, I declare if there isn't a reindeer!'

It was a reindeer, sure enough, but it was far away, and they had some trouble in stalking it. At first the ground was in their favour, and the reindeer, little thinking of danger, was off its guard. It moved about; stood still; and at last lay down in the middle of some level ground. They managed to advance unseen to the edge of this plain, but could get no farther for want of cover, and the range from here was too long. They peered up cautiously, but startled the reindeer, which set off running; then as suddenly stopped to gaze. There was a report—two shots, for aught I know, and the reindeer started off anew; but when it stopped again to look round it fell to the ground. Simmons, I think, was its destroyer.

Like all the reindeer up there in the north at this time of the year, it was extremely thin; not a trace of fat was to be found on

its body, and the skin was so poor that it was useless; but a reindeer is always a reindeer, and I can quite understand that its pursuers were glad to have had the chance of shooting it.

When the animal was skinned they took the meat on their backs and started down to camp. They were heavy burdens they bore on their way back, and in addition they had some plants as well. As they were trudging down the valley they saw an animal running up it on the other side of the river. It was some distance away, and it was impossible to say for certain what kind of animal it was. They first guessed it to be a polar calf, though they did not think the animal was quite the right shape, nor was it likely that such a little thing would be running about the country on its own account, without any of the full-grown animals.

What it was must for ever remain a mystery. They also guessed it to be a glutton, and perhaps it was one. It is true that all the years we were in these regions we never saw a trace of this greedy and bloodthirsty beast of prey; but that is no reason why there should not have been a single glutton about on a summer trip northward. It is a known fact that it is found in the more southern tracts, and where the reindeer is the glutton is usually not far off.

The botanist reaped but a meagre harvest on this trip; but it was early in the spring, and there were not many species from which to cull, so that not much could be expected. It was also difficult to get about on account of the spring floods. The rivers and streams were much swollen and often impeded their movements. It would have been far better in this respect later in the summer, but then again the ice would have been so weak that any attempt to drive up the fjords would have been an utter impossibility. After staying in there a couple of days they drove east again. They had rather bad weather for several days, and in many places the ice was almost impracticable. Outside the large sandbank was nothing but open water, and they were obliged to drive on the ice-foot.

On their way back they made acquaintance with a harbour seal of most curious temperament. It was lying on the ice, and though

the teams made straight for it it did not move a muscle. The dogs were stopped at thirty yards' distance, and at once began to bark and howl, notwithstanding which, this peculiar animal remained unmoved through all the deafening clamour without attempting to take to the water. The ice on which it was lying was so low that the water reached to its body, and several times it dipped a flipper down as if to feel whether it was very cold or not. It gave the wayfarers the idea that it found the water too cold, and had not the courage to dive in. Poor seal! It had to pay with its life for its want of hardihood; Bay sent it a bullet through the head.

Isachsen used Stolz's dogs on this trip. They were quick and intelligent, but not in every way the pleasantest to drive; for they had a trick of trying to go up every hummock they came across, and the higher it was the better they liked it. To prevent them, once they had got the idea into their heads, was almost impossible, and often they walked like flies up the most immoderately high places, which is a sort of thing that rather delays one. Across Sydkapfjord progress was easy, until just on entering the sound; there the ice was as thin as a leaf, and in many places entirely gone. It was really remarkable that they managed to get along at all in the face of such difficulties as they had. About five on Sunday morning, July 15, they reached the ship, having left their loads behind them at the crack, whence they were fetched by a boat later in the day.

During the fine weather which now followed for a time we made steady progress with our summer work. The sailmakers, who were stitching full steam, were able to sit out on deck every day, in the beautiful warm weather. Both of them, however, had other work besides sailmaking, so that they had to portion out their time with method. Baumann had a number of observations on hand, and the mate, of course, quite enough to do without this additional task. At this time also a very necessary re-stowing of certain things in the hold took place, causing extra work for several busy days.

On Thursday, July 19, the wind began to blow from the south-south-east. The 'Fram' slipped the floe she had been fast in, and

lay at anchor in the land-channel. We then put a warp to the edge of the fast ice, heaved anchor, towed her farther out, and dropped anchor again close by the edge of it. We did this because we thought we had been lying too near land, and had too little chain out; several times the ice had pressed us farther in.

Again this year the thaw in where we were lying took place with marvellous rapidity. The day after the last sledge-party came aboard, the narrowest part of the sound, near Skreia, was free of ice, and the channel ate its way rapidly up the fjord. On



A MORNING PIPE.

Saturday, July 21, Schei and Simmons were able to row from the ship across the sound, and some way up the fjord along the east side of Skreia. The west sound, too, was open by this time, so it will be seen that there was not much ice left on the fjord.

We were now able to dredge frequently, and wherever the water was ice-free the results were good. The bay, in particular, in which we were lying, always repaid us. We had a fishing-net with us from home, and this Baumann and the mate put in order and lowered near the shore. In this manner we were lucky enough to catch a few sea-scorpions, but they were so diminutive

that a great number were required before it was any use to try and prepare them for food. With a little patience, however, we at length managed to collect enough to make it worth while to attempt frying them, and one fine morning they appeared hot and crisp on the breakfast-table. It was long since we had eaten anything of the kind; and, although they hardly come under the



SUNDAY PLEASURES.

head of first-class fish, it was the general consensus of opinion that they tasted delicious.

The steward at this time also 'took to science,' as he termed it, and went ashore every evening collecting plants and insects. One evening, when he had been his trip ashore and was returning on board, he saw a codfish swimming towards the boat. Certain sceptics thought it highly improbable that it was a cod, but Lindström stuck to his opinion, despite these malicious souls who told him that he must have seen his own reflection in the water; he only laughed, and I have never seen a cod do that.

I had long been thinking in what direction we should set our

course once we were out of our trap. My original intention had been to go back to Smith Sound, and try to penetrate thence to the north side of Greenland, nor had I given up the plan; but as circumstances were that year I had my doubts about the advisability of doing this. Who could tell that the condition of the ice in Kane Basin was more favourable this year than it had been the two previous summers? And, besides, we knew that there was an expedition up there already. Added to this, we had by no means completed our work in the tracts in which we now were, and to leave this work unfinished, in the state it then was, we did not consider either quite right or satisfactory. We looked upon it as our duty to go through with what we had begun.

All these considerations combined brought about my decision to sail west on the first opportunity. If we should have a really favourable ice year, and an occasion presented itself of exploring the yet unknown tracts of newly discovered country in the west, we might possibly sail down Penny Strait and Wellington Channel, and take up our winter quarters somewhere down by Victoria Land.

However, this was all in embryo—we must first bring a little more certitude to bear on the lands we had begun to investigate before we could think of pushing farther on. All things considered, therefore, I gave up the idea of penetrating up through Smith Sound, as I looked upon it as of far greater interest to thoroughly explore the country here in the west.

We accordingly prepared for a start. On Friday, July 27, we began to fill the boiler, a task performed by Peder and Olsen, who went ashore and fetched boat-loads of water.

While they were engaged on this, they saw a stoat darting in and out among the stones. They at once caught and killed it, and Peder brought it back with him. As soon as he came on board he went off to Bay, who, I need scarcely repeat, was the naturalist of the expedition, and told him that he had seen a stoat among the stones. Bay bitterly reproached him for not having tried to catch it. Peder looked innocence itself, declaring that he had no idea that Bay cared about stoats, but that if it was so important, he could easily catch it when he went ashore after the

next boat-load of water; he knew quite well where it was. Bay looked absolutely dismayed at Peder's extraordinary *naïveté* in supposing that it would be possible for him to find it again so long afterwards.

Now Bay and Peder were specialists at betting; they were always at it, and by no means kept to small sums—from twenty to a hundred kroner being the usual figure. Had all the bets been lost by one party only, it would have looked bad for his financial position. As a rule they betted entirely on matters of chance, as, for instance, the future state of the wind or weather, or whether the melting of the ice would proceed quickly or the reverse; truly hazardous things to bet on! But both Bay and Peder were practical men, and as soon as the one had lost, the winner immediately gave the other an opportunity of recouping himself, so that in this manner they liquidated time after time. It was not long since Peder had lost fifty kroner in this way, and he probably thought that now was his chance of getting it back. He had no difficulty in arranging the bet, it was done in less time than it takes to tell, but hardly had it been concluded with all due formality than Peder pulled out the stoat and held it up in triumph under Bay's nose. Bay used a good deal of unparliamentary language, but Peder only grinned and stuck to it that the bet held good. These bets were not all to be taken quite seriously, and after some dispute, where the words 'scoundrel' and 'blackleg' and similar appellations were distinctly audible, it was agreed, in a way, that Bay had lost.

By Saturday, July 28, the thaw was so far advanced that Schei, Simmons, and Bay thought of attempting a trip, with scientific objects, to the inner part of the fjord, particularly along the shore outside a big river which came down on the east side of the fjord. They returned on Sunday evening, neither the weather nor their catch having been very satisfactory. There was little life to be found at the head of the fjord, and the insects remained in hiding.

Now dawned the dredgers' real golden period. It was done at first by Bay, Peder, and myself in one of the sealing-boats, at the outer part of the fjord; but by degrees, as the ice thawed and

our field of labour extended to a greater distance from the ship, our force had to be increased. As a rule we were four in the boat, Olsen or Nödtvedt taking turns as fourth man. Later on, Isachsen also came with us, when he had finished his magnetic observations about the end of July. Every one was anxious to take part in these excursions, for they brought a certain amount of change into our existence, and we were all eager to discover new forms of animal life.

‘By degrees as the ice thawed’—we had indeed ample opportunity at this time of noticing how the ice was disappearing. Masses of it would drift up the sound with the tide, to the inner part of the fjord, but once inside it they vanished into thin air; only a dilapidated hummock drifting out now and again, sorry indeed in plight. One or two small icebergs had also strayed in, and drifted backwards and forwards; they were well tossed about in here, although it was not the open sea, and one or other of them was always capsizing.

The fjord itself was almost entirely free of ice now. At the outer part of both sounds there was still a fast margin, but fragment after fragment came away from it and drifted inwards with the tide, so that even its days were numbered.

On the floes floating about in the fjord the bearded seals lay sunning themselves. We generally brought two or three back with us every evening, shot by Bay or Peder when they were lying near at hand and their capture was not likely to take us a long time.

They were glorious days, those! We started off directly after breakfast, provided with food and the ‘Primus,’ and stayed out the whole day. At dinner-time we would go ashore to cook our food, and lie about afterwards, thoroughly enjoying ourselves, while we smoked our pipes before getting into the boat again.

One day we landed on some rocks just abreast of Skreia. A great number of terns had their nests there, and as it was late in the season the young ones were hatched and were sitting about in the clefts of the rocks. Long will it be before I forget the reception we had! The whole flight of terns came rushing through the air,

screaming and behaving generally as if the end of the world had come. They flew straight at us, and we expected every moment to have them in our eyes; but at the last moment, when they were so near that we could have touched them, they suddenly wheeled straight into the air again, almost brushing our caps as they did so. A visit of this kind is amusing enough for a few minutes, but it also has its disagreeable aspects, as I, who was walking first in a red cap, was especially made to feel. These terns were exceedingly badly behaved birds, and I heard Peder, who was walking behind me, laughing till I thought he would split. What my cap and clothes looked like after we had beaten an ignominious retreat to the boat, baffles all description. We rowed from land as hard as we could, but the terns followed us for some distance, screaming till we could not hear our own voices in the boat; their cries were so piercing that they literally made our ears ache.

One day when we were dredging in the outer part of the sound we noticed a bear lying on a large floe, which was about a mile in length. We decided to have the bear; and accordingly rowed out of the sound alongside Skreia, and put the boat into a lane between the floe and the edge of the fast ice, in order to get the bear inside our course and prevent it from escaping along the edge of the ice into Jones Sound. It proved to be a she-bear, with a rather large cub; we saw the latter plainly lying asleep.

As luck would have it, we were rowing down wind, but there was nothing to be done. We knew we should alarm the animals, but we hoped to get a shot at them all the same, if only we could keep them inside of our course, where there was open water. Even if they took to land we looked upon their capture as certain; but we knew that they would make a desperate effort to reach the fast ice, and we therefore took our time up the sound, rowing under land.

We even went in pursuit of a bearded seal on the way, shot it, and took it with us. It was lying a good distance from the bears, so that the report of the rifle did not alarm them; though animals in the region of the Arctic seas are so used to the cracking

and thundering of the ice, that they are never particularly alarmed at the report of a gun and such like noises.

When we neared the animals, which as I said before we were obliged to do from to windward, they set off in a hurry, taking a diagonal line in towards Stordalen. We followed in hot pursuit, in order to cut them off on the southern side of the valley. Our trouble was great in steering the boat in and out between the hummocks, but anyhow we managed to arrive before the bears. When I saw that they were starting to go up the valley, following the river, I sent Peder after them, while we remained in the boat ready to give them a warm reception if it should occur to them to turn back.

After Peder had gone a little way up he caught sight of the animals, dropped into ambush behind a rock and shot them both as soon as they came within range. On hearing the shots we ran up the valley, skinned the booty, and carried it down to the boat.

Three seals before, and now two bears—we had meat enough for dinner and no mistake! True, we had brought with us food from the ship, but this was really too tempting, and we felt that we must reap an immediate benefit from our bag. We accordingly set the 'Primus' going at once, and were soon able to comfort ourselves with some delicious broth made from the seal-flesh, with a good bear-steak to follow, and coffee to end up with.

We did not dredge as much as usual that day, needless to say, for we had spent a good deal of time in the pursuit of our booty; but we did a certain amount all the same, and were well pleased with what we accomplished in that direction as well as in the other.

These trips, if on occasion they were very hard work, were also at times extremely enjoyable; and for the very reason that we had had to exert ourselves a good deal, the rest and ease afterwards seemed delightful beyond measure. And then such lovely weather as we had during the dredging-time out there! It was simply as beautiful as one could wish. Of course had the weather been bad there would have been an end of all pleasure in the boat.

During this work we discovered one day a large shoal extending

over a third of the breadth of the sound from the east shore, due west of the northern part of Stordalen. I do not think there could have been more than eight or ten feet of water there at low tide, and at high water twelve feet more. The 'Fram' drew about eighteen feet. It would have been a pleasant state of affairs had we run aground there! Not that the 'Fram' would not have withstood that shock, as it had done others, but it might well have been disagreeable and annoying.

As soon as the weather became somewhat passable Schei and



THE HEAD OF FRAMS HAVN.

Simmons were continually on the move; sometimes ashore inwards, at others rowing in the skiff, near Skreia or in the western sound. Schei had also taken on himself an entirely new avocation, and had become a maker of blocks. A number of our shells had been destroyed in the fire, and as we had not very many left it was necessary to replace them by new ones.

The farther the summer advanced the sharper was the outlook we kept on the ice out in Jones Sound. Every evening, when our day's work was done, some of us always went up the mountain-sides. Sometimes we could see big lanes which seemed to stretch right away to North Devon; but the distance thither was so great

that we found it impossible to make out the channels close under land, and in all probability those we saw lay about midway.

If only the wind would blow steadily from the south for a little while, the ice near us would drift, probably far away, but at any rate some distance from land.

Towards the end of the dredging-time in the sound we went once or twice to East Cape, and from the top of it had a splendid view both east and west along the shore. Near South Cape a great



THE OBSERVATORY IN HAVNEFJORD.

deal of open water was visible, and looking west we saw the most unmistakable water-sky we could desire. The same too was the case south-westward, in the direction of Cobourg Island.

At the end of July and beginning of August we had just outside Havnefjord what I am convinced were the largest masses of ice to be found in the whole of Jones Sound. I think, in fact I am prepared to state, that of all the fjords in the vicinity, Havnefjord is the one which during the greatest number of years is the latest to become navigable. I do not mean by this that the fjord itself was covered with ice; quite the contrary, the ice on it thawed sooner

than the ice, for example, on Sydkapfjord. But there was, as it were, a still, slack belt of water stretching in a curve from South Cape eastward almost to Fram's Fjord. It could not justly be called dead water, perhaps, but it was inside the full force of the tide, and it is in such places that the pack-ice remains lying for the greatest length of time. I also made the remarkable observation that in the tracts around Havnefjord it seldom blew from shore; we, at any rate, never experienced any strong land wind.

This circumstance often brought to my recollection a spot on the Norwegian coast called 'Stillefjordingen.' It is the part from Melö northward until some distance past the well-known mountain of Rota, or Kunna, on the boundary-line between North Helgeland and Salten. Although a land wind for two or three reefs may be blowing not far off, a vessel sailing these waters will hardly move; in fact, it is scarcely too much to say that often when an off-shore gale is raging all the way up the coast, there will probably be a dead calm here. I have myself experienced the winter storms hissing out from every little bit of fjord round about, while in 'Stillefjordingen' there was not more than a hardly appreciable breeze.

Before leaving Havnefjord we put up a cross to our dead friend, Braskerud. It was made by Olsen, bore a short inscription, and was erected on the point facing Skreia, immediately above the spot where his body was committed to the sea. We supported it by piling up stones; and as it stands there, high on the point, it is visible to all who may sail these waters, witnessing to a Norwegian who died at his post, gentle and unassuming, as he had lived.

CHAPTER III.

WESTWARD WITH THE SHIP.

SEVERAL broods of ptarmigan had their homes not far from our harbour, and the ptarmigan-shooters kept such a sharp look-out on them that they knew where they were to be found at almost any moment. They watched them jealously, to see how they were growing, wondering often whether they would be big enough to shoot by the time the 'Fram' weighed anchor—evidently they had set their hearts on roast ptarmigan for Christmas. Of hares there were very few, though occasionally we managed to bag one. To the great delight of the sportsmen, the young birds grew so rapidly that they were able to shoot them with a good conscience on the day before our departure.

On August 6, when Baumann and I went up the talus to get a view, we noticed that a considerable change had taken place in the ice outside the fjord. We discussed the possibility of forcing a way out at once; but in the end decided that it would be better to wait a couple of days longer. On the evening of August 8, when we were again up there, we decided to make an attempt the following day.

On our return I gave orders that the fires should be lighted during the night, so that steam might be up by seven o'clock next morning. If there should be a change in the weather, causing the ice to be pressed towards land, and thus hindering us, we would coal instead.

Early in the morning of Thursday, August 9, Baumann and I were again at the same spot, gazing out across Jones Sound. We decided to take the ship out; and he at once went down to give orders to fetch the dogs on board, while I climbed still higher to get the best possible view of the situation.

It was a very beautiful morning; brilliantly clear and light. Not a cloud was on the sky; not a breath of wind stirring. The sunbeams were thrown back, so strongly from the mirror-like sea that I was dazzled, and could hardly open my eyes. Not a block of ice was to be seen anywhere on the fjord; which lay, blue and sparkling, down below my feet. The mountains were pictured with such marvellous sharpness in the surface of the water that I was almost in doubt as to what was reality and what reflection, and had one taken a photograph of the view, it would really not have mattered which way one held it up. The snow had melted so much during the dry, warm summer that the country, practically speaking, was bare of snow. On Skreia there was not a flake to be seen. Only in the inner parts of the fjord the ice and snow still lay on the peaks and pinnacles, but even there it had greatly diminished.

It was such a still, peaceful day. Every now and then a gull flew with calm wing-strokes inwards up the fjord: not a sound was to be heard from them. No disturbers of the peace had landed to-day on the tern rocks, and brought their irascible inhabitants into commotion! A lonely butterfly fluttered noiselessly past. Among the stones close by the humble-bees hummed soberly and deliberately; while the flies buzzed and fidgeted around, but they left me in peace,—they had not yet acquired a taste for human blood.

I gazed far, far out across Jones Sound, and noticed more open water than I had hitherto seen. At the same time, I knew full well that it would be a hard matter to bore our way out past the rocks and across the fjord—though, after all, we had not so very far to go to pass the rocks and reach a lane which stretched a good way south, and then the worst would be over. I had seen what I wanted, turned, and went down to the harbour.

I came from Nature's great peace and solemnity, up on the mountain-side, to the midst of an ear-rending hubbub. The dogs were just being taken on board. The din and disturbance generally these dogs can make when they have a mind to, borders on the incredible, but on this particular occasion they surpassed themselves. Those which were left on shore awaiting their turn howled and behaved as if they were possessed

in their eagerness to go on board. And those aboard, of course, settled down and were quiet? Not a bit of it—they made more noise and commotion than even the others. Their clamour, in all probability, was only caused by joy at going on board again, for a howl is their one expression for all kinds of feeling. As a rule, however, their contentment was short-lived, for they were restless creatures, always wanting to be where they were not. When they were on the ice, the ship or the kennels was the one object of their desire; on board or in the kennels, all they wanted was to be on the ice. Very often they scratched a way out of their kennels; but we had only to shut the doors while they were still on the ice for the kennels suddenly to become a paradise, and they burrowed a way in again—or, at any rate, made a praiseworthy attempt to do so. There was something quite human about them.

Only the dogs had to be taken on board that morning; the forge and the other things we had on land had been brought to the ship the previous day. Skipping the dogs was accomplished by about eleven, and at noon we weighed anchor and steamed out from our second winter quarters.

Where should we be next winter?

Through the ice-free sound all went well; but farther out, east of the rocks, we entered the ice, and lay there ramming the whole day long. Whenever we got a chance we forged on full speed ahead; and when perforce we came to a standstill, we backed to get an impetus, and gave another ram. Sometimes we all turned out on the ice with poles and boat-hooks to prise off some floe or other which had given us particular trouble. We stood due south until morning watch on Friday, by which time, having forced a way through the ice-belt, we could set the course westward in open water.

Jones Sound was still lying smooth as a mirror; but dead it certainly was not, for round the bows of the vessel gambolled a school of harp seals. Some of them made their graceful bounds above the surface of the water, and, curving their bodies, described a half-circle before diving head first under again. There is no falling flat on the water with these animals. Others among them

did not rise above the surface, but beat and splashed with their hind-limbs, solely for the purpose, apparently, of attracting the greatest amount of attention—just as among us human beings.

But there were others besides the folk on board who watched the seals. 'Gammelgulen' and his friends were tied up forward on the forecastle, and had a good view from there of all that was going on. They were dozing in the quiet of the early morning, but, when they caught sight of the seals under the bows, started up as if the deck were burning under them. Very far they did not get, needless to say; they remained by the gunwale staring at the seals, whining and uttering short howls of baffled hopes, and every now and then making as if they meant to jump over. They would not have done this even had they been loose, but they hung over as far as they could reach, while their bodies quivered and shook from eagerness to go in pursuit. It was not a pleasant sight.

The other teams had not such a good view as the lot forward, but they, too, understood that something was going on, and assisted to the best of their ability.

All the way west the sea was free of ice; but south of us was ice the whole way from North Devon to a good distance north, so that we had to steer a little north of due west, and run a little nearer under the north coast than we had thought of doing. A meridian altitude which Baumann and I took that day showed a latitude of $76^{\circ} 7'$. We continued to stand westward, and neared land, along which we sailed, turning into a big bay on the south side of 'Colin Archers Halvö,' or 'Colin Archer Peninsula.' This I did in order to have a look at the fjords about there, for the land westward appeared to be so low that we thought Colin Archer Peninsula might possibly be an island, and that by sailing round it we might come out in Norfolk Inlet.

About midnight we moored to the ice on the west side of a point projecting east, which we called 'Nabben,' or 'The Knoll.' The ice was very weak, and did not seem as if it had many days left. It was extremely thin, and there was hole upon hole in it all the way inwards as far as we could see from the crow's-nest.

There were numbers of bearded seals on the ice. Never had we seen them lying so close together as they were that day. Apparently they were asleep, but it was only dog-sleep; every now and then they looked up and moved a little, but it would not have taken much to arouse their attention.

We did not wish to leave this place before we had taken observations for longitude and latitude, and therefore lay-to till a little past noon on August 11. Baumann and Isachsen went ashore, determined their position, and measured some angles between the different points and headlands.

Simmons and Schei made a short excursion to a narrow tongue of land between the fjord-arms 'Sandspollen' and 'Eidsbotn.'* This strip of land was very barren, and had extremely little to offer in the way of vegetation; but both found things of interest. The country was of no height to speak of either south or west. Large stretches of sand extended for long distances. Directly after dinner we steamed out again.

The pack to the south of us had by this time begun to move somewhat more to the north, and in places the channel between it and the land was rather narrow. Outside some of the sands, which ran out for a great distance, we just floated and no more, as far as I could make out; but farther east we had a better land-channel. On the east side of Cape Vera were a number of grounded hummocks and small bergs. Very large they were not, but they touched the bottom for a distance of half a mile to a mile from land. On nearing Cape Vera we entered a violent cross-current, with the result that we as good as made no way at all.

The aforesaid headland is very high and steep; beneath its cliffs a narrow strip of shore, perhaps a hundred yards in width, extends towards the sea. The country was free of snow; and great numbers of fulmars were sitting on their nests high up in the rocks.

But what was that lying up on land close under the steep

* Some readers will know, though others may not, that the above are common terminations in Norwegian place-names, a *pol* being a small bay or rounded creek; *eid*, indifferently an isthmus, or a low neck of land extending from shore to shore through otherwise mountainous country, as, for instance, between two fjords; while *botn* is best described as a cirque.

walls of rock? A white speck—was it a bear, perhaps? I pulled the steam-whistle to try and blow a little life into it, but there was not a movement. No, it could not be a bear—not of the real kind, at any rate, for the whistle would certainly have made it give some sign of life. Probably it was a white stone; at all events, that is what we took it to be. After passing a little island due north of Cape Vera—we called it afterwards 'Sankt Helena'—we set the course for Cardigan Strait.

We still had the current hard against us, and so strong that we did not make many miles during a watch. But we hardly came across ice all through the night, only here and there a little strip which had drifted across the strait. It was a matter of no difficulty to force the ship through this, although the current kept the ice very close.

On Norfolk Inlet, as we passed by it, the ice was lying, but whether it was fast ice or drift ice we could not make out with



VENDOMKAP, AND COAST EASTWARD.

certainty ; in all probability it was the former, which had not yet been broken up.

We had a tearing current through the sound all that day, and the 'Fram' was by no means easy to steer. Often she swung almost right round, and turned broadside on. By the end of the middle watch we had reached the north end of Cardigan Strait, and there fell in with a great deal of fast ice. Northward, as far as we could see, the situation was the same. Then a thick fog suddenly set in, and almost before we knew what was happening the ice had closed in on us, and we lay nipped fast. The current, which had slackened by degrees, was now running as swiftly northward as it had previously done southward, and it was for this reason that the ice had closed in so suddenly on our north.

Here we lay fast until at the turn of the tide the ice slackened again ; the fog also lifted a little, and we continued north-westward with a fair view over the ice. We saw a very decided water-sky in the north-west ; the atmosphere was extremely dark ; and we hoped that it would not take us very long to make our way into the open water it indicated.

We soon discovered, however, that it was not going to be an easy matter to reach our promised water northward. The ice was very close as we went farther west, nor was there any particular life in it. It consisted entirely of thin bay-ice. Mile by mile we forged our way westward. We went very slowly, keeping all the time three or four miles from land, but made some progress nevertheless. Often we stuck fast in the ice, but as a rule got out again in the course of an hour or two.

We tried steering nearer land, and went into a bay on the north side of Arthur Strait. But a little way up it we were stopped by ice lying close in to land. In order to steer clear of this we had to hold a course northward for a time, working our way subsequently in the direction of Table Island. At one time we were also hindered by thick fog ; but worse than this was a stiff breeze which blew up from the north-west, and which by degrees set the thin ice in such motion that it began to drift south-eastward at the slightest puff of wind.

We then tried keeping nearer land, where we saw a couple of

large lanes, but we did not do much there, and soon went out again. The ice was drifting at a tremendous pace, and navigation in such waters was no easy matter. No sooner had we run ourselves in between two floes, with the intention of backing to gain an impetus, than we had the ship lying across the lane, broadside on, and away she would be swept just as if she were a fragment of ice. By degrees, however, we grew more cautious, though we did not better our progress thereby, as the ice was drifting full speed in exactly the opposite direction from our course. Sometimes we lay boring the ice for an hour or two at a time; then, in the end, drifted just the way we did not want to go!

Still, even that day we advanced a little. In the north-west the dark water-sky still beckoned and enticed us on. We began to grow impatient—despite our hope and firm belief that we should be able to force our way up to the open water of which it was the sign.

On August 14, in the evening, the wind went round rather more to the north, and suddenly the ice jammed still closer. Things then came to a dead-lock, and we drifted back quickly the same way we had come. During the first twenty-four hours we lost way considerably; but matters were even worse when the wind went over still more to the north, increasing the drift towards land. The position was not improved when the thin cakes of ice began to run one under the other, in layers of many thicknesses; while the big floes, which before had surrounded us, were now for the most part broken up into small pieces. Then, as if our difficulties had not been great enough before, the cold set in and young ice formed in the lanes.

It was now a case of waiting, it appeared. We sounded once or twice in a watch, and made use of the opportunity to take a few samples of water, and the temperatures at varying depths, also to do a little dredging. Nature here was quite dead. I do not think we saw a single seal north of Cardigan Strait, and the land did not appear to have more to offer than the sea.

Meanwhile we drifted more and more towards land, a little to the east, perhaps. We thought that we had every prospect of getting free some time during the course of the autumn, but

naturally it was very annoying to be held nipped for such a length of time. Nor could we do any work of value here ; what we did was chiefly by way of passing the time.

While we were lying-to off shore in this way I one day saw a herd of animals which I thought were reindeer. Peder, of course, was convinced that such was the case ; but later on I came to the conclusion that they must have been hares. At that time we were not aware that the hares in these tracts sometimes congregate together in numbers. In this case there were some sixty or seventy of them, or, possibly, the number may have been nearer a hundred. It may well be thought that there could not be much difficulty in distinguishing between reindeer and hares, but as a matter of fact it is often anything but easy, and as the reader will perhaps remember, even the most experienced walrus-catcher may be mistaken. There were many on board who greatly wondered what kind of animals these could be. One thing, however, is certain, and that is that many times afterwards we saw numbers of hares together, sometimes in the autumn as many as thirty animals at once.

I am inclined to think that it is very usual for the hares in these tracts to flock together and change their grounds in the winter months. What the reason for this may be I do not feel able to say with certainty. The conditions of life up here are different from what they are farther south. There are places in the north where the wind in the winter blows month after month from one prevailing direction. Winds like this will in the end sweep with them for long distances all the snow on the ground, leaving it quite bare ; while in other, less exposed, places the snow is piled in drifts, and lies more undisturbed. Where the country is most free of snow, and where at the same time the vegetation is most vigorous, the hares, I should imagine, seek their winter haunts, and in consequence of this the field wherein they disport themselves becomes more restricted.

That this is the one and only reason I would by no means affirm ; but that their congregating together is more or less a question of food seems to me very probable. What I do feel sure of is that their motive is not defence against possible enemies, for

of these the hare has fewer in winter than in summer. Nor do I think that they entertain such fear of the darkness and desolation of the polar night as to lead them to collect and, like the reindeer in certain parts, migrate south to lighter regions when winter is at hand.

On August 24 we did some coaling, and filled the bunkers so carefully that I do not think they had been stowed as full since we left Christiania. We had just reached the entrance to Cardigan Strait, and several times during the day made a little spurt up it. We took every inch we could get, and if the vessel only advanced a cable-length at a time we were pleased, for we were lying very close to land. As the day advanced and the coaling neared its end our hopes of soon getting free also rose. The current became swifter and swifter, and as soon as the tide was in our favour we were rapidly carried south, well clear of land.

During the course of August 25 we managed to advance quite a good way down Cardigan Strait, despite the ice being very close; and in the night, when the tide turned, although the ice jammed so that we found it necessary to stop the engines, we felt certain that when it slackened again with the next tide we should get clear.

My plan was to steer south of North Kent and up through Hell Gate, but I counted without the inevitable south-east wind. Early in the morning, just when we were expecting the change of tide, a stiff breeze from the south-east suddenly sprang up, and soon increased to half a gale. We now, to our sorrow, drifted fairly rapidly north-westward in the closely packed ice and against the stream, and in the evening found ourselves far north in the strait, well nipped in the pack. We hoped against hope that the south-east wind would soon drop, and that a fresh breeze would spring up at once from the opposite quarter; it was all we wanted to take us at express speed through the sound. But the fates were against us! The south-east wind did indeed go down, but instead of a north-west wind a stiff breeze from the north-north-east sprang up, and off we drifted south-westward, towards land again, with ever closer ice and without any chance of going the way we wanted.

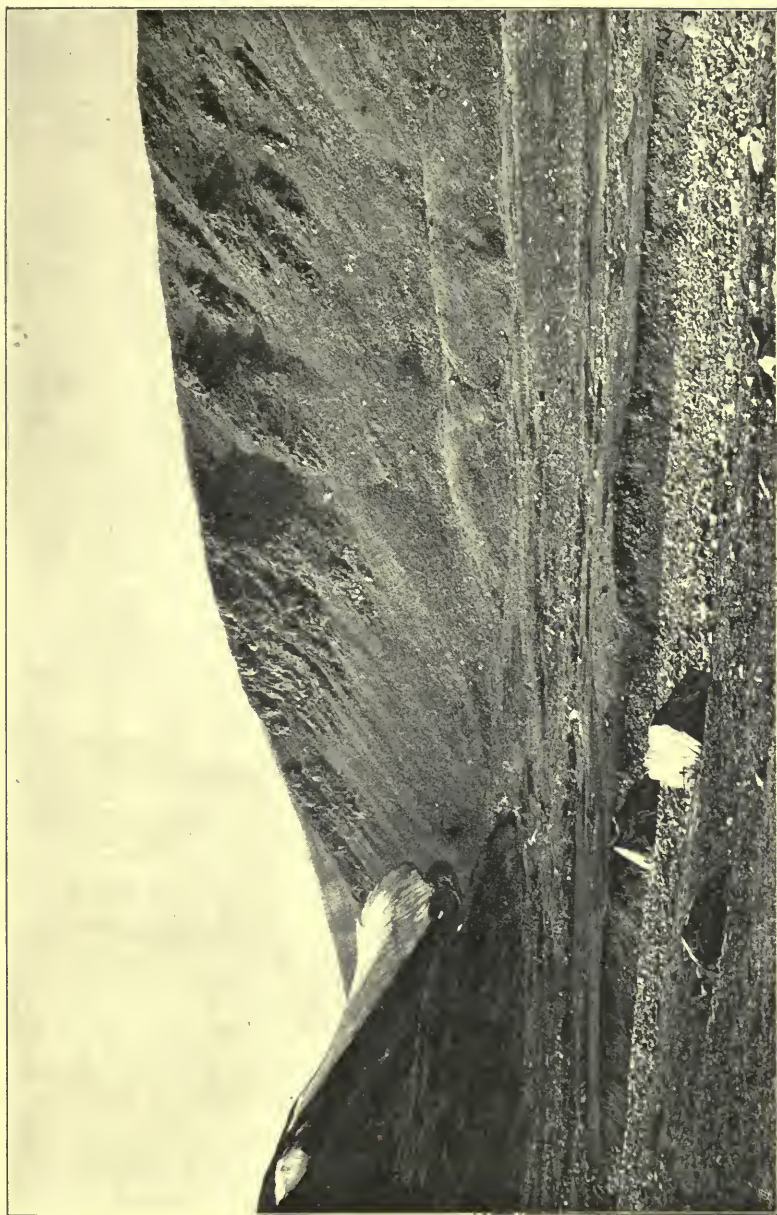
The north wind blew without ceasing; it was perfectly incomprehensible where it all came from. Every time it lulled for a moment we fondly hoped it had blown itself out, and that we should have no more of it, but almost at once a steady breeze from the same quarter would get up again, and though it was not strong it was quite enough to keep the ice packed. After a time the drift ceased altogether, and we remained lying motionless in the same spot.



THE DREDGERS COME ON BOARD.

We had now had frosts for some time, and when this fresh north wind began to blow the thermometer remained at about eighteen to twenty-one degrees above zero, though sometimes, if I remember rightly, it read as low as nine or ten above zero. This was a disappointment greater than great. Every day now the momentous question was discussed: *Shall we drift out this autumn, or shall we remain lying here, beset, the whole of the winter?*

Belcher Channel would not provide particularly comfortable winter quarters. Everything was wanting in it which could make



VALLEY NEAR RUTHERFORD BAY.

a winter harbour attractive. For one thing, the ice was so terribly uneven from the violent pressure which had taken place that there could be no possibility of driving loads on it until, at any rate, the spring, by which time the snow would have filled in and smoothed over the inequalities. Then, in addition to this, there was always the chance that if the ice were broken up we might be set free in the middle of the winter, and there was no telling where we should go then.

A season of wagers arose at this time, and figures that made one absolutely giddy, intermingled with the most positive assertions as to our future, were staked as soon as mentioned. Those of a pessimistic turn of mind of course declared that we should remain where we were through the winter; though there were others who thought we should lie there for ever, and that if we drifted at all it would only be farther and farther north. We did indeed see a black water-sky in the north-west, and on almost the whole east side of Graham Island, but nearer at hand the outlook was bad and unpromising indeed. The ice held us as in a vice, and the weather was continuously dirty. Clammy fogs and scudding snow day after day, both night and day. We all longed to go ashore and see a little what the land had to offer, but in the circumstances thought it wiser to wait a little longer before running more uncertain chances.

We now began to make gradual preparation for the winter. On Monday, September 3, we put out the fires, and blew off the water from the boiler. I would not unship the rudder at present, but had everything made ready, so that we should only have to hoist it off its hinges. I had not given up all hope of still getting free, and therefore thought it best to leave the rudder where it was. We moved the dogs out on to the ice, where we tied them up, and set to work to wash the decks, for one soon finds out when one has fifty-four dogs and about a score of puppies on board.

On September 4 we were about a mile and a half from North Devon. Peder and I, each with our team, drove ashore, equipped for a three or four days' trip. The ice was so bad that sledging on it was almost impossible; but having little baggage on the

sledges we managed to get along all the same, and were not very long before we reached land.

We encamped a little way above the ice-foot, and then went off to see if there was anything to shoot, but though we tramped about the whole day long we did not come across a sign of game, with the exception of the track of a single hare. The ground we went over was considerable, and I am prepared to say there were not many hares about in the parts we traversed.

Next day we sallied forth again, but this time did not see even a hare-track; and the trail of any other animal seemed to be out of the question. All that we observed were the excrements of reindeer and some old cast antlers, so here was proof positive that, at any rate, there had once been reindeer in these parts.

Most remarkable of all, however, was that we walked that day over the ground where we had seen the large herd of animals some days previously. It was now covered with the most splendid tracking snow a pursuer of game could desire; but all our looking was in vain; and not even from a height, whence we had a capital view over our surroundings, could we discover a single animal. Mile after mile the land lay beneath our scrutiny. Large gently sloping valleys were sunk in the wave-like landscape, but everywhere the ground was equally dead. But when one came to think of it, what was there for animals to live on here? We saw no vegetation except down by the shore; as soon as we turned our steps away from that, we encountered only bare sandy plains, heaps of grit, and rocks.

Our gaze wandered far south through Cardigan Strait. It seemed to be quite free of ice, and there was open sea all the way to the northern edge of North Kent, as far as Graham Island. On the west side, on the contrary, we saw nothing but the pack, though there were some open lanes, which we could have followed down to Cardigan Strait, hardly more than five or six miles from the ship. We struck camp that day and drove out to the 'Fram,' where we arrived at half-past eight in the evening. Here there was every prospect of fog; and, sure enough, next day we had the same horrible raw weather as before.

All this time that we lay waiting to slip through the sound

our usual designation for it was 'the Casting Hole,' for it really seemed as if some time or other the whole of the pack would have to be pressed through it. There lay we and the ice together awaiting our turns—we, at any rate, waiting to go through the purgatory of the casting ladle before we could reach our goal.

All hands now set to work to look over and repair their equipment, first and foremost the footgear, so that every one might be in readiness by the time we began on the autumn sledging. The sledges also required looking to, and over-runners had to be made for all the sledges that would then be in use.

Where we might eventually winter it was still impossible to say, but it was just as well to be prepared. If the worst came to the worst, we might perhaps remain where we were for part of the winter; but wherever we were we should have to shoot game for food, and it was therefore best to have our equipment in order.

Fosheim's finger was not yet quite well, and consequently he was not fit for much, though he could just manage a little work at the planing-bench. He therefore helped us with the over-runners for the sledges.

Baumann and the mate had expressed a wish to go a long shooting excursion on land, in the direction of Arthur Strait. It did not follow, of course, that because we had failed to see anything of game during our short trip ashore, there might not be any farther inland, but all the same I had scruples about letting them go. For one thing, I did not feel at all sure about the ice. We had, however, only had a slack breeze from the north the whole time of our sojourn up here, with the exception of a short period when there was high wind from the south-east which drove us north; but even should a land wind begin to blow and the ice recede, we must somehow or other be able to get hold of them again. So, after the most careful consideration, I set my scruples aside, and Tuesday, September 11, was fixed as the day for their departure.

The engineers had by this cleaned out the boiler, laid up the engines for the winter, and finished their work in the engine-room. They were now doing duty on deck. We hauled up the

rudder, but let it hang from the winding tackle, up in the well, so that it might be clear to hinge on again at any moment.

The poor dogs were having a bad time on the ice. They suffered a good deal from being tied up day after day in the open air, so we began our preparations for building them some kennels, though before this could be done a smithy had to be put up. This we started on September 13, and so quickly went the work, that before evening the walls of sawn marble-like blocks of ice were already up. The following day we intended to move in the forge and anvil, and complete the ice-palace with doors and a roof of wood.

True it was that there still remained a considerable quantity of open water both in the north-west and towards the east, but the steady cold, 10° to 7° Fahr. (-12° to -14° Cent.), had laid fairly thick ice on all the lanes and pools. Some movement of the ice, however, had been noticeable all day, and when, later in the evening, the wind freshened to a fairly stiff breeze from the south, it began to be less quiet around us, though the wind was still choppy and without steadiness. During the night the breeze increased to a whole gale, but in the form of squalls, and September 14 dawned with strong wind from the south-west, fog, and heavy snow.

About noon, as we were busily engaged putting the roof on the forge, we suddenly became aware that a big lane was opening out due north and south, four or five hundred yards west of us. About four in the afternoon the lane began to close again, and when the weather cleared later in the evening, we saw that we had drifted far from land. There was much open water about among the ice, but the 'Fram' lay fast by a big floe.

On Saturday, September 15, the situation was, on the whole, unaltered. The strong south-west wind went round to the north-east. It still snowed and was still thick; and the barometer had every show of right when it fell rapidly, for the weather was anything but fine.

Peder and Isachsen had just begun on a series of temperatures, and nothing denoted that anything extraordinary might be expected, but suddenly it was remarked up on deck that the ice was beginning to move, and every now and then a gentle lapping about

the bows told us that the ice had parted round the 'Fram.' Everything passed so noiselessly and insidiously, that before we realized what had happened, we were lying as free as if we had never been nipped in the ice. Another transformation scene then took place, and that with celerity; in a remarkably short space of time the ice fell into rubble, and of the large continuous mass there was soon left nothing but small detached fragments.

It was now a matter of saving whatever could be saved, and we had to put our backs into it if anything of the kind was to be done. The smithy, forge, anvil, and tools were conveyed on board without mishap. Then came the dogs, which were drifting off on another floe. We moored to it, and the work of taking them on board was at once begun, occasioning, needless to say, a vast amount of clamour and howling. Some of them were so delighted at the prospect of getting on board that they would not wait their turn, but jumped into the water so as to reach the vessel more quickly. They had to be fished out when they reached the edge of the ice, and were hauled up dripping on deck, where a vast deal of shaking then took place.

In the end all the dogs were brought safely on board, but not without a good deal of trouble. Meanwhile, however, we were moving steadily south-westward with the floe, while that proud structure, our forge, drifted farther and farther away! If only we could have recovered the precious materials we had expended on the roof! But the distance grew greater and greater, and to reach it now was out of the question. We might be glad, however, that we were drifting landward again, for it would be a bad business if our folk ashore were unable to reach us. It would be long before we could drive between the ship and land, and as things now were, to use a boat was an impossibility.

During the course of the day we managed to rescue the sounding apparatus which Isachsen and Peder were using when the crack came, though only in the nick of time.

In the evening about ten o'clock the wind suddenly veered round to the south-west and increased to a gale. This was a pretty state of affairs! The storm wailed and whistled around us; the snow lashed our faces. We, of course, drifted the way the wind

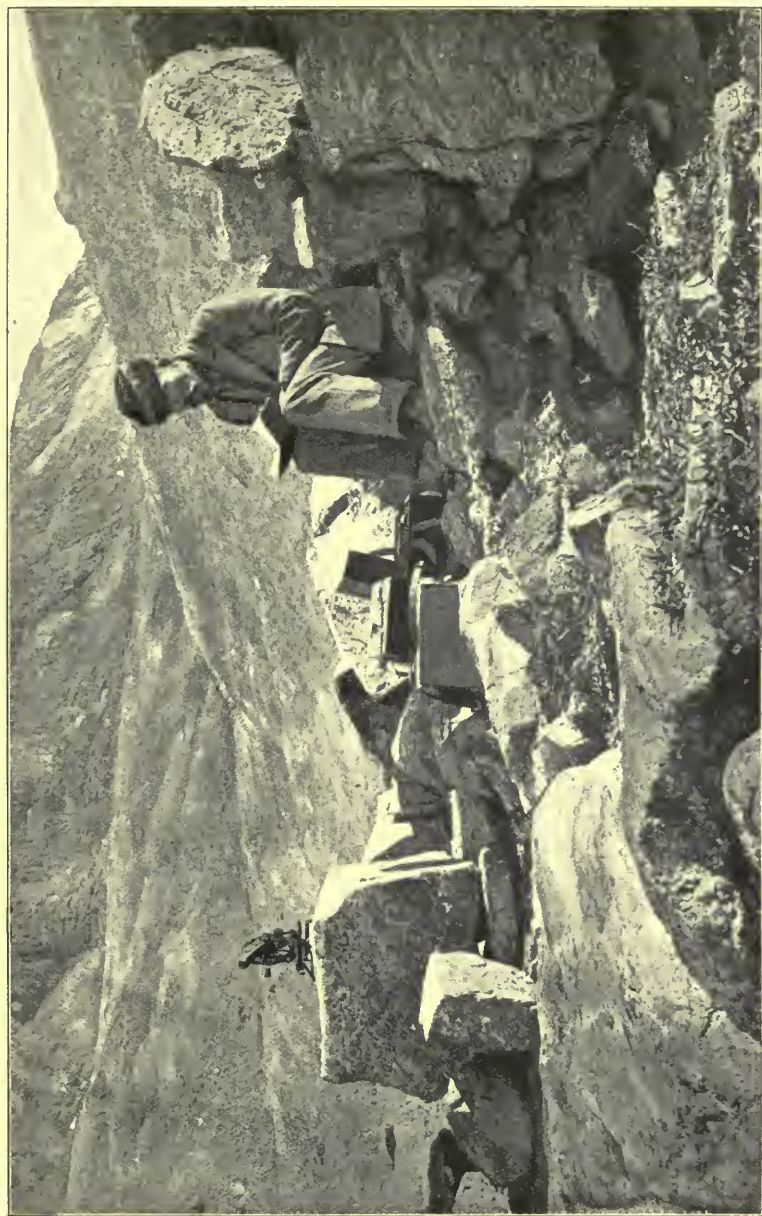
blew—that is to say, north-eastward—until, on Sunday, September 16, it went over to the north-west. At the same time the weather began to clear, and we were able to make a landfall—we were due west of Graham Island, just under land.

Noticing that the ice to the south was somewhat slack, I at once gave orders to fill the boiler, light the fires, and get up steam as quickly as possible. At this juncture we caught sight of our dear forge, and I sent off some men to save the materials, while Schei, Peder, and I set to work to get the rudder on its bands again.

All hands helped at prising a way through the ice, and by about four o'clock we had come so far that we could stand south towards land, as, of course, we were anxious to pick up Baumann and Raanes. In case we should not find them, however, we prepared a cache to be left ashore, along with a letter, saying we were steering towards Norfolk Inlet, and that I would send some men north to meet them with sledges as soon as we had anchored.

We now made rapid progress southward. There was a stiff wind astern, and the ice for long distances was very slack—we could steam mile after mile without coming on ice. Farther south it was rather closer, and our advance looked more problematic. Peder took up his post in the crow's-nest and wielded the big telescope, for now that both the second-in-command and the mate were away, Peder and I took turns to be officer of the watch. I was very glad when I heard Peder shouting down that he could see the sledge-party driving along the shore. I then relieved him, and set the course on a bay where I saw there was fast ice, hoping thus to avoid having to lower 'a boat, as I thought it would be possible to steer to the edge of the ice, pick them up quickly, and start again at once. The ice was moving swiftly along the coast, and it was necessary to make all possible speed.

Baumann and Raanes saw what we were after, and made all the haste they could. Meanwhile we slowed down in order to avoid arriving at the edge of the ice before they reached it. Down on deck Peder had mustered all the crew which belonged to it, and they stood ready with rope-ends to heave the sledges and dogs



RIGHT !

aboard. And quickly they did it too—it was not many minutes before all were on deck, and the next moment we had laid-off from the edge of the ice, and were bearing out towards Cardigan Strait.

It was many a day since our spirits on board had been as high as they were now. We had all been a little depressed at lying drifting here, north of land, with the prospect of exceedingly comfortless winter quarters. A most unexpected and welcome change had befallen us, and it was natural that we all rejoiced at it.

Our returning sportsmen had had bad weather the whole time; and it was with some consternation that they had seen the wind go round to the west, and the pack receding from land. When would they be able to get on board again? What had become of the ship they had not the slightest idea, for we had very soon drifted out of their range of vision. When, later on, they caught sight of the 'Fram' we were far to the east, and steering due south. They imagined that the ice was hindering our advance to the west, and that it was our intention to go down Cardigan Strait. They were a good deal relieved when they discovered the 'Fram,' for they then thought that if the worst came to the worst they could always find the ship again in Norfolk Inlet.

They had only been provisioned for a week, and as soon as the bad weather set in they began to practise strict economy, so that they might have something to fall back on in the event of their being cut off from the ship. They had seen no traces of reindeer, and of only one bear, which had taken its way along the shore.

They had received the impression that Arthur Strait, so called, did not exist; but that the land in that direction consisted of a low isthmus on which were situated some lakes. They could say nothing for certain, however, as the weather had been so bad that they did not exactly know where they were. It was quite possible that they had seen the isthmus and the lakes somewhere else.

They had been on the move since four or five in the morning the day they came on board, and we therefore thought they deserved to be let off their watches that night, for there were enough of us in any case to allow of this.

CHAPTER IV.

TO GAASEFJORD.

WE steered south through Cardigan Strait in fairly easy waters, until the change of watch at midnight. At that hour we met a close stream of ice lying straight across the sound, and Peder, who was taking the middle watch, had orders to lie-to. It was no use to run ourselves into this thick mass of ice in the middle of the night. By three o'clock, however, on the morning of September 17, he had forced his way through the belt; but at four, when I came up, he had been obliged to turn again on account of another ice-stream.

Despite a strong north wind we then tried steaming up under the coast of North Kent, hoping that by following it we might get through Hell Gate. But we were soon obliged to turn, for the whole of the sound north was packed full of ice, and to take a ship that way was out of the question.

We then followed the belt of ice southwards. It stretched across the entire expanse of water as far as North Devon. By keeping close under this land we managed to slip through the ice-stream, and then tried to push our way up through Hell Gate on the east side of the belt, but here, too, we were unsuccessful; the ice was too close for us, and we failed to slip through. Our only resource then was to go east, to Gaasefjord.

By eight in the morning we were at the eastern cape, and bore thence up the fjord. A stiff breeze was blowing straight out from it, rendering our pace by no means rapid; but by four in the afternoon we had pushed our way in, and anchored in fifteen fathoms of water rather more than a mile and a half from the head of the fjord.

The day was Nödtvedt's birthday, and it was celebrated with doubly good spirits. On the whole journey we had hardly felt as elated as we did then. A better winter harbour we could not wish for, and everything in Gaasefjord seemed beautiful to our eyes. The storm which was raging outside had not reached in here. The fjord was free of ice, the land bare, the air mild; there was hardly any crack to be seen. It seemed as if we had come to an Eden!

The anchor had hardly touched the bottom before we had lowered a boat, and Baumann, Raanes, Fosheim, and I rowed ashore. This was partly for the pleasure pure and simple of being on land; and partly also because we had a serious object, which was the finding of a good place for tying up the dogs. We walked a little way inwards along the shore, and soon discovered that there were plenty of hares to be had here. On our short walk we shot three brace and saw many more, but we would not spend time in pursuit of them at present; we left that for another day.

We were soon on board again, and set to work at once on preparing for a boating expedition which was to start next day to a large valley running west into the land a little way down the fjord. Simmons and Bay were going to dredge, and Schei to geologize in the mountains; but as there had to be four men in the dredging boat, one to look after the dredging and three to row, Isachsen and Peder were to go too. A large tent was to be taken for their common use, and this it was proposed to pitch by the fjord. Schei would then come down to this permanent station every evening.

The boat started next morning, and we who were left behind set to work to move the dogs ashore, and wash the deck after them. When, at a little past noon, we had finished this work, Baumann, Fosheim, and I walked up the valley; the two former to look for hares, and I to find out if the river was practicable for sledging, for we had already had a good deal of frost at night, and had seen that there was ice on the river. If driving on it was possible I would at once start the transport of the dog-food across to the north side of the land.

As I was walking along the valley, scanning the country in all

directions, I suddenly caught sight of a herd of polar oxen lying on a sand-hill. There were eight of them altogether. Such an opportunity could not be let slip, for we had scarcely any fresh meat left—in fact, our larder had hardly ever been so empty. I therefore hastened west to Baumann, told him what I had seen, and we both started in the direction of the animals, but they were lying so unfavourably for us that it was impossible to stalk them, and come within reasonable range.

Four of them, in spite of this, remained lifeless on the field of battle, while the others took flight up the mountain-side. While I was occupied skinning and removing the entrails from the animals we had shot, Baumann followed the others on to the wastes. He came back after a while, having wounded an ox, but as he had no more cartridges, and each time he attempted to approach the animal it made as if it would charge him, he thought it better to return and fetch some as speedily as possible.

Fosheim meanwhile heard the shots from the other side of the valley, gave up his somewhat unremunerative pursuit of the hares over there, and came back to me, whom he was hard at work helping when Baumann returned. They now exchanged places, and he set off after the wounded animal, which he very soon found and shot.

Big-game shooting had not been our object when we left the 'Fram,' and consequently we were not provided with such a luxury as a hatchet. To attempt to open a polar ox with only a knife inevitably brings its own reward—I broke my first-rate flaying-knife, and in consequence we were unable to skin more than two of the animals. However, this did not prevent us from cutting ourselves a prime steak, furnished with which delicacy we came on board about eight o'clock, and Fosheim an hour later.

The mate and Baumann left the ship early next morning to fetch the last-shot animal, but Fosheim and I did not get off till later, as we had not yet had time to put more than two sledges in order, and Baumann had them both. But at last, by half-past ten, we were ready to start.

We followed the ice-foot for the first half-mile towards the head of the fjord. The going here was not exactly of the best

kind and consisted mainly of icy slush, but anyhow the sledges travelled fairly well. After this we drove up the river until we were in line with the place where the animals were lying, and then struck straight up to them between some hills covered with grass. Three animals were transported to the ship in the forenoon, and the fourth and fifth were conveyed thither by Hassel and Fosheim during the afternoon.

Ever since we had entered the fjord a strong wind had been



SUMMER IN HELL GATE, LOOKING NORTH.

blowing from the north. It made things pretty cold, but we knew that as long as it lasted the fjord-ice would not form; so, although it was an ill wind, it blew us some good. During the night of September 19, however, it went down, and in the early morning we had a slight breeze from the south-east. A thick sheet of ice began at once to form over the whole of the fjord.

As we expected, the dredgers arrived back in the course of the afternoon. The brash had increased so rapidly where they were that they could not work any longer, and so had packed their things together and come on board while there was yet time to

row. It was as much as they could do to pull the boat through the heavy brash.

Bay was much struck with the richness of the fauna in these tracts, and said that he had never before found anything like it in the Arctic regions. His harvest was surprising in many respects, and it was a pity they could not remain there longer. To Simmons, on the other hand, the trip had proved a disappointment, the vegetation at the head of the fjord being very sparse. Schei had scoured the mountains in all directions, had examined stones and boulders, and collected a number of specimens.

One evening, after their return to camp, they had heard something moving outside the tent door, and on looking cautiously out saw a fox gnawing Schei's gun-case. By the time they came out of the tent it had already dragged the cover a short distance away, but when it saw them left it and slunk off. It was not in the least shy, and, unalarmed at the voices inside, it had come quite close to the tent-door, where the cover was lying. It must have been exceedingly hungry, poor thing.

For the first two or three days we found the snow and brash on the water a great inconvenience to us, but the ice soon became strong enough to bear, when we had 'ski' on. Now dawned a couple of golden days with the hares, and almost every one on board had a shot at them. We made good bags at first, but the country round the ship was soon exhausted—about fifteen brace being killed altogether.

Immediately after his return Schei began to investigate the mountains at the head of the fjord. His hammering brought to light a great number of beautiful fossilized plants, and for a time, while he was engaged on this work, it was necessary for him to have three or four men to help him bring the stones on board.

The mate, Fosheim, Olsen, and I decided to go a trip up the valley to try and get some meat for the larder. Olsen and the mate greatly looked forward to the expedition, for neither of them had as yet met a polar ox at close quarters. The mate had been out before, but the oxen had cheated him, and he was now firmly resolved to reverse the situation.

Early in the morning we started up the valley, and five miles



SOUTH OF HELL GATE, LOOKING NORTH-EAST.

or so from the head of it passed a little lake. Not far from the watershed we left the valley and climbed up on to the heights, where we had a splendid view to the west. According to Fosheim it was fine country for big game, but we did not see a single track or sign of any animal, and eventually returned as empty-handed as we had come. Some way down the valley we parted company, Fosheim and the mate going across to the east side of the valley, to see if they could bag a few hares; Olsen, who seemed to have lost interest that day, continued down the valley along by the river, while I took my way up the slopes on the west side.

I had not gone far up them before I observed two very small animals away in the bed of a river; they were tumbling and jumping about, and having a great game it appeared; but what sort of animals they were I could not make out at such a distance.

I crept cautiously nearer to make inspection, and was astonished to see how curiously like our own puppies they were. It was hardly remarkable that they should look like puppies from a distance, but it was remarkable that the nearer I went the greater became the resemblance. I was much surprised as I made my way towards them, and was certainly not less so when I was forced to admit that no mistake was possible—they *were* two of our own puppies. It really had not occurred to me that these small creatures, which had only come into the world a couple of months previously, would be able to go so far.

I remained standing a little while looking on at their game, but suddenly I saw something move in the river-bed not far away. It was a fox, which was stealthily watching them, and looking very much as if he would like to carry one of them off. I stood perfectly still; I wanted to see how this would 'go off,' as Bay says. The fox knew well how to stalk his prey; he understood the art of seeing without being seen, and slunk from stone to stone, sometimes crouched low on the snow, sometimes curving and agile as an eel. It was not long before he was within a few feet of the puppies and ready for a spring, but they were so taken up with their childish gambols that they saw nothing of what was going on.

Several times I thought: now for it, and more than once the fox was on the point of making a spring, but at the last moment

always hesitated and drew back. He appeared to be a little afraid. I grew tired of such a waiting game, and began to stalk the fox on my own account. It was only some forty yards away, but all the same I wanted to get rather nearer, and after having done this by degrees, I made an end of it.

I picked up the dead animal, and, calling the puppies, started back to the ship, but the little things could hardly keep up with me, so there was nothing for it but to carry them. This grew troublesome after a time, so I induced them to follow me by dragging the fox along the ground, and as they were determined to catch it, my device answered very well now and again.

As we had now full certainty for it that no more big game was to be found in the valley, we began to make preparations for a trip northward, with a view to capturing the necessary supply of meat for the winter—in other words, we prepared for what at home is known as the ‘autumn kill.’

The forge was taken ashore, and Fosheim and Peder bent into shape the new wooden runners for the sledges—Fosheim having made two pairs of oak over-runners during the autumn for screwing on when we drove over bare land. They were about an inch and a quarter in thickness, and were now put through the finishing stages.

A large proportion of our occupation at this time, however, was shooting hares. The results on the whole were good, but every day we found it necessary to go farther afield. Four or five men were working all this time in the mountains. Nödtvedt, who was used to stone-mason’s work, made some pickaxes and bars, and for a long time helped Schei to dislodge the fossils he was collecting. They made use of the bad days to pack the stones in boxes, which were then stowed away in the hold.

The skins of the last five oxen that had been killed were treated with a solution of alum.

On the morning of September 27, Fosheim, the mate, Peder, and I drove northward. We took with us only three teams, but two tents—a four-man and a two-man tent. This unaccustomed latitude in the matter of room was in the event of our shooting so many animals that some of the meat would have to be left behind;

in such a case one man would remain to guard it, and would consequently require the two-man tent.

We drove up the valley, passed the watershed, and late in the afternoon encamped a little way west of it. This seemed to be splendid big-game country, and we decided to try our luck at once. Fosheim and the mate went off south-westward, through the valley; Peder and I northward.

Better ground for polar oxen it would be difficult to find. Grassy plains stretched on both sides of the valley wherever we looked, but of game there was not a trace. After walking for an unreasonably long length of time, Peder and I eventually came down to a lake, which must have been a good mile in length. We gave it the name of 'Storsjön,' or 'Great Lake.' Across this we tramped, and ascended a small height in its vicinity. From here, too, we saw large grassy stretches, but not a trace of any animal.

When the two parties met in the tent that evening we learned that our comrades had had no better sport than ourselves, and we saw that if we were to hope for success we must go farther afield.

The day afterwards we accordingly drove across our lake of the previous day, and continued northward across the grassy land. The country was flat, of inconsiderable height above the sea—not very many feet—and was dotted with pools and small tarns. It appeared to be a great place for geese.

About five miles north of the lake we descended to the coast again. The sea-ice had just formed, and was not very strong, and for this reason progress on it was rather slow. We therefore kept along the shore, on the ice-foot whenever there was one, and only took to the sea-ice by way of a short cut when it was necessary to cross bays and creeks. This suited our purpose just as well, for land animals were what we wanted, and we had nothing particular to do out on the sea-ice.

We made small excursions up from the ice-foot to points whence we thought we might get a view, and scanned the country unrelentingly, but not a trace of polar oxen did we see, although we came across the tracks of hares and ptarmigan in numbers; and also of foxes, particularly on the ice-foot.

During the course of the afternoon one of the steel plates

under Fosheim's sledge came to grief, and we had to mend it before we could go farther. This led to our camping as early as three o'clock.

The next day we continued in the same manner, that is to say, drove along the ice-foot in the inner parts of the bays and struck straight across the low projecting tongues of land. The whole of the way our eyes were gladdened by vegetation, a circumstance which made us wonder the more that no game was to be seen. The weather, however, was not of the best kind for shooting; it was rather misty, and we could not distinguish objects at any distance, so that had there been game about we should hardly have seen it.

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CHAPTER V.

HAPPY HUNTING GROUNDS.

DURING the course of the afternoon we found it necessary to drive across the mouth of a fjord, which may have been a couple of miles in width. We did not at all care for the look of it; the ice was very weak, and we found small channels yawning in front of us, almost before we knew they were there. We took the precaution to drive where we saw the slush had been pressed together, and where presumably the ice would be strongest, but even there it only just bore.

Nevertheless, we got across without mishap; but just as we were approaching land on the opposite side we saw a bear glaring at us from the crack. We were going up wind, and evidently it had had its eye on us for some time. The dogs suddenly became restless, and I concluded from this that they had got scent of the bear; I let go the traces, and they set off like mad animals.

I had a young dog in my team at this time; it was only nine months old, and was now on its first trip, so that it still had a good deal to learn before it was experienced enough to look after itself. On this occasion, when it set off after the bear, it managed to get its harness entangled with that of the other dogs, and thus came in for a gratis lift at a good round pace. Poor dog! It must have taken many a hard knock as it bounded and rolled like a rubber ball across the rugged ice. Sometimes I saw it on its belly clinging to the ice with straining, outstretched paws; sometimes it was on its back struggling desperately with all four legs in the air. It would not soon forget its first journey!

But what in the world were the dogs about? To my amazement the whole pack dashed right under the bear's nose and set

straightway up the hillside! I was so annoyed at this high-handed manœuvre on their part that they would have paid for it with a good thrashing had I been near them, but as it was I had to content myself with sending my warmest blessings after them as I watched them disappear over the crest of the hill on the other side of the bay.

There was nothing for it now but to slip another team, the mate's. They attacked the bear in a way, but they were a miserable lot, and had not the pluck to make a dead set at their quarry.



INNER PART OF GAASEFJORD.

In the mate's team was a young dog called 'Kari,' and this was about her first bear-hunt. Young and inexperienced as she was, she went straight for the bear, and received such a vigorous blow for her pains that she shot several yards into the air. She looked very small as she dropped on to the ice again, and putting her tail between her legs, slunk off to a hummock, where she sat down and looked on at the rest of the game, without moving from the spot.

The bear had at first made off obliquely up the fjord; but as it neared the opposite shore suddenly changed its course and started

outwards. The mate and I had both set off running to head it off, but the mate had kept a more westerly course than I had, and so came in for the first chance of a shot. He must have missed it in his haste, for the bear went on just the same, but the shot made it change its course, and it now headed for me. I dropped the animal, and then the whole pack threw themselves on to it—they had found their courage now, even the cowards. They fell on its body and tore its hair like mad things. The bear turned



FROM SCHEI ISLAND. GOOD PASTURE.

its head backwards and forwards a few times, glaring with dying eyes at its enemies; but when we came up it was dead.

At the same moment that the mate and I had started after the bear, Fosheim had gone hotfoot after my dogs, which had run away up the hillside. While we were now standing contemplating 'the white 'un,' we heard, to our astonishment, the dogs giving tongue on the other side of the ridge. We looked at one another, and had to confess that we had done them injustice. They were not so mad after all! They knew how to appraise game,

it appeared—we had not a moment's doubt but that they were after polar oxen.

We accordingly agreed that the mate should see to the carcase of the bear, while I hastened up to Fosheim, and I had not gone many steps before I heard shot after shot. I hurried almost more than was good for me, perhaps, but when I gained the crest of the ridge the firing had stopped.

There stood Fosheim, his gun smoking; by his side Peder with his best dog, and before them, in a steaming pool of blood, a herd of fallen oxen, eleven in number. Fosheim alone had shot down the whole herd; Peder, like myself, having arrived too late in the day.

We all three fell to work to disembowel the animals. The skinning had to be left till next day, but, so that the carcasses might not freeze and become too difficult of manipulation, we folded their legs under them and piled them up, body by body, as close to each other as possible. After the dogs had gormandized sufficiently and we had provided ourselves with soup-meat we went down to the sledges again, drove them a little way in towards land, and camped on the ice-foot, immediately below the slaughter-ground.

While my three companions, next day, Sunday, September 30, were driving down the meat I climbed a hill on the north-east side of our camping-ground. The weather was brilliantly clear, and there was a fine view over land and sea. Even Cape South-West, more than a hundred miles distant, was visible. What met the eye, however, was not very satisfactory. The ice northward was deplorable, and out by a little island a few miles still farther north was open water. The same was the case under Store Björnekap, and as far in that direction as I could see. Nothing but open water and water-sky!

It appeared to me that this open water extended the whole way from Björnekap to the north side of Graham Island, and on towards Cape South-West. In the ice to the south I observed lane after lane, almost wherever I looked, and as far as I could make out, it would be impossible to drive to the islands; in any case, one could not drive farther north than the point on which we were now camping.

I returned from my climb while the three others were up fetching the last of the meat. By ten in the forenoon all the carcasses had been brought down to the tent, and the skinning was begun on. At midday all was done—so expeditious a business is it when in experienced hands. Each carcase was then split in two, and the whole supply laid out to freeze. The larger the pieces the less the risk of losing them on the way, was a conclusion we had come to from several dearly-bought experiences in that line.

The bear was also fetched to camp, and the blubber cut away from the skin. We then rested for the remainder of the day, and let the dogs eat their fill of bear-blubber and other delicacies.

Peder asked me if he might remain behind as watch after we left the following day, and when I consented to this his good-humoured face beamed with delight. He meant to shoot any amount of game while we were gone—reindeer, polar oxen, wolves. Of course bears too, but he was not so keen about bears, they were old friends of his. No, what he particularly wanted was wolves!

The three of us started south on the Monday morning, taking with us enormous loads of meat. We struck into and followed our old track, while I took advantage of every halt to go a little way up on land and scan the country for game. We required more killing-cattle.

Later on in the day, before starting to drive across a largish river, I made my usual excursion, this time along the banks by the side of it, and began to use my glasses. To my surprise I actually saw a herd of animals on some level ground a long way off, though owing to the mist I could barely distinguish them from their surroundings. I told my companions what I had seen, and we decided to drive up the river and attack from there.

It was not many minutes before my team got wind of the animals, and began to pull like mad. The river was by no means narrow, and was flanked by sand-hills on both sides. Half a mile farther up it we came to a large open channel in the middle of the river, and had then to take to the very thin ice between the channel and the bank, but we had not gone far before this too became so weak that we had to drive up on to the banks for fear of an accident.

Had the ice been dangerous, the sand-hills, when we got on to them, proved almost impracticable. In many places there was so little snow that the sledges continually stuck fast, and the dogs were unable to move them an inch from the spot. When this happened, they became almost beside themselves with impatience; they reared, pulled, and strained as if it was a life-and-death matter for them to come up with the game, and when their efforts proved unavailing in the end, they fell to howling and whining in the most piteous manner.

By dint of unremitting exertions we succeeded in pushing and hauling the sledges beyond the stretch of open water, and when at last we had accomplished this, and were able to drive on the ice again, it was not long before we arrived at the spot whence we had to strike up on land. We were lucky enough to find a little gully, which we followed, thus somewhat reducing the difficulties of the ascent, and soon found ourselves on the wastes.

But what had become of the oxen? We ought to be quite near to them now, and yet there was not a trace of any to be seen. The dogs, however, were so excited that I felt sure they were somewhere about, probably in a hollow. My team had always been so certain and reliable that I had not the slightest hesitation in letting them go, and so slipped their traces. A couple of minutes afterwards they were far away across the waste.

The mate and Fosheim came up just after this, and as the mate had not yet had a chance of shooting polar oxen, we agreed that he should have his innings that day. He seized his gun and hurried off; while, just to make certain, I took mine too, and followed him. Fosheim remained behind to see about the sledges, something belonging to which had gone wrong.

The two other teams had been slipped at the same time as mine, but the stupid dogs seemed to have no idea that we were following up a scent. They ran about aimlessly in all directions, and interwove their traces in front of Raanes's legs till several times they nearly tripped him up; and so they went on, the whole pack of them, until they were close up to the square where my dogs were keeping things going.

The mate went to within proper range and began to fire on the

animals, but he was not in luck that day. The shots did not seem quite to take effect, and I thought I had better help at the shooting down of the last of the animals. When the whole herd had been done for we went up to it and began to count heads. It is often quite a difficult matter to count the number of animals in a square of the kind, particularly when, as then, there are young animals among them. They stand so close, and are so long in the hair, that the whole herd looks like a single shaggy mass. In the end, however, we ascertained that eleven oxen had been killed.

But on the field of battle lay, unhappily, twelve animals. To my great regret I found 'Basen' lying among his fallen enemies, on the farther side of the square. On looking closer we discovered that a bullet which had first gone through one of the oxen had afterwards struck the dog, penetrating both shoulders, so that he must have fallen on the spot. I lost in 'Basen' a good and faithful dog; we had been great friends the whole time, and above all I was sorry to lose him in such a manner. On journeys like ours, where so much depends on the dogs, relations spring up of such mutual confidence and affection that one comes to regard one's team as a band of friends.

We set to work at once to open the animals, but before we began on the skinning we fetched the sledges, pitched the tent, and had something to eat. It did not take many minutes to make some coffee, and still fewer to drink it and eat some sandwiches, and after that we went back to our work with redoubled energy. By evening there were only three animals still unskinned, and they had to wait till next day. The oxen had not been shot till four in the afternoon, so that we had every reason to be satisfied with our day's work.

It was arranged that the mate and Fosheim should drive to Peder's camp next day to fetch some of the meat, and also bring him back with them, so that each load might have its driver. Meanwhile I undertook to skin the three animals which had not yet been done.

During the course of the afternoon all three returned; Peder's face radiant with delight at our good luck, though I am sure he must have felt disappointed at never being with us when there was

anything to shoot. However, he said nothing about it, but what he did loudly bewail was the surprise of the morning.

He had just made himself the most delicious cup of chocolate, expending on it rather more milk than strictly he ought to have done, considering he was going to remain there for a time and that this was his first day; and just as the pot was boiling the two others had dropped on him and had to have their share. And what had he got in return for his pains? Why, not so much as a



THE LAST ON THE QUARTER-DECK.

‘Thank you,’ for they had merely told him that his Excellency the Governor could very well afford them a cup of chocolate, the more so that it was paid for with ‘public money’!

At our northern slaughter-ground there was now not more meat than could be brought down in a very short space of time, so next day I sent off the three others and stayed behind myself to guard the meat-heap. But hanging about round the tent alone with nothing whatever to do, I found anything but to my taste, and by ten o’clock in the morning I was bored almost to death,



WHAT HAS BECOME OF THE ALLOWANCE?

which was hardly what I had come this expedition for. Every argument told in favour of a turn up the valley, though I had no intention of shooting, as we had now quite enough meat for the winter. All the same, I took my rifle with me, seeing that one can never tell what may happen on a walk of the kind.

I took my way across some slightly rising ground near the tent, and up across a level grassland which, gently undulating, spread a long way to the south, between the mountains. It was a well-watered, and, as things go up there, luxuriant landscape, with tarns and rivulets scattered about in great numbers, joined by many tributaries from the numerous side valleys.

After I had been walking a little while I turned off up a small valley which ran inwards in an almost southerly direction. The ground here was absolutely cut up with hare-tracks! Countless tracks crossed and re-crossed one another in every possible direction. Never in my life had I seen anything like it! When I had had enough of following the valley I ascended the slopes on the east side, and fell on to what seemed a veritable high-road of tracks; the snow in many places being trodden into perfectly hard runs.

While I was standing wondering at this curious sight I suddenly saw a number of white specks on some flat ground a little way off. At first I could not in the least make out what they were—they looked more like white stones scattered about the barren land than anything else—and therefore took the telescope to my aid. I was highly astonished when I discovered that each distant speck represented a hare!

This must be investigated more closely, I thought, and walking towards the spot I was soon able to count thirty-one animals. The thirty sat motionless the whole time, looking as if they were asleep; but the thirty-first was plainly a sentinel. She hopped about in and out among them in never-ceasing vigilance. Every now and then she sat up and listened for a time, but not hearing anything to arouse her suspicions, continued her rounds among the sleepers again.

I made my way towards them with all the stealth I was capable of, but it was not many minutes before the sentinel

noticed me and became disquieted. Every time she showed signs of alarm I stood still for a while, and when her fears were allayed took another step or two forward. But no sooner did I begin to move than she scrutinized me as sharply as before, and again grew frightened.

I had plenty of time, however, and took things quietly, so that in the end I really came within quite a short distance of the hares, but at the last moment the sentinel apparently thought me a little too pressing, and suddenly starting up ran frantically round her flock, striking the ground with her hind legs till it quite resounded. Then she set off up the slopes with all the others after her in a long straight line, looking as if a white cord had been stretched up the hillside and over the ridge at the top. I remained looking after them for a while after they had disappeared from sight over the crest of the hill. The whole thing was so strange that I wanted to think it out.

Not far from me still sat two hares by themselves; evidently they did not belong to the other lot. I thought it would be interesting to go across to them if possible, and see what they were about, but realized that I must make use of other tactics if I would approach near to them.

Earlier in the expedition I had once pretended to be a bear, but gave it up on account of a Krag-Jørgensen rifle. This, I thought, was a fitting moment to impersonate a reindeer, or some other kind of big game, and I made a valiant attempt to simulate their grazing movements backwards and forwards on the sward. Meantime I kept a sharp look-out on the hares, and always took care to approach a little nearer to them.

The hares soon noticed the ever-advancing figure. They stood up on their hind legs and gazed at me for a long while. I immediately stopped, remained quite still, and gazed back at them. When they were quite reassured I began to move about the grass again, and at last they grew so accustomed to my presence that they did not take the slightest notice of me. My tactics were so successful that, in the end, I was not much more than two or three yards away from them. It was quite touching to see these great, innocent, Arctic hares sitting only a few paces off, quietly gnawing

roots. The only notice they vouchsafed me was an occasional sniff in my direction.

As I stood watching them one of the hares came quietly up towards me. So near did it come that I stretched out my hand to stroke it, but this it did not quite like, started a couple of paces aside, and then began quietly to eat again.

I stayed long fraternizing with the hares down on the grass, and at last we did not mind each other in the very least. They went on with their occupations quite unconcernedly ; I with mine. I felt something like Adam in Paradise before Eve came, and all that about the serpent happened.

After a time I took my way downwards towards the river, where we had met the open water the day before. A single eider was now on it, diving. Why had it remained there? All its companions were long since gone. It was probably a young bird, unable to follow the others in their flight towards the south, and so it had settled down here by itself in the channel. Poor bird! One day it would find the water covered with ice, and there would be an end of it. The bright eyes would close, the lonely cry of need cease to be uttered. One should never give in in this world! No. Better fly ; fly till the wings break, and one drops dead on the spot.

It was now so late in the day that if I wished to be at my post when the others returned I must hurry back to camp. I was only just in time ; no sooner was everything in order, and I ready for them, than the sledges were at the door.

Next day Fosheim, the mate, and I, each with a large load, started southward. Peder remained behind as watch. The weather was foggy and thick ; the going on the sea-ice rather slow. When it was possible to do so we kept to the ice-foot, but across the more deeply indented bays we found it necessary to leave it. On the whole we made good progress all the way, until we began to negotiate the neck of land leading across to Gaasedalen ; there the snow was very thin, and the sledges would hardly move. The fog, too, prevented us from finding the best way. Farther south matters were still worse. We got up on to some large level wastes without a sign of vegetation, and where there was nothing

but stones and grit—really good sledging country! We literally wore through the plates, and all the 'ski' we had with us. Of the oak over-runners which Fosheim had been at such trouble to make, and which were fastened on over the German-silver plates, only some splinters remained.

This was too much. We accordingly left two loaded sledges up on the neck of land; the mate remained as watch; and Fosheim and I drove the 'water-sledge' back to the ship. This sledge, as I have mentioned before, was shod with steel.

On the southern side of the watershed, by the lake in the upper part of Gaasedalen, we met Bay, shooting. From him we learned that Schei, a couple of days previously, had seen five wolves up the valley, but had not been able to get within range. He had tried sending them a shot, but the distance was great, and he missed. We too, before meeting with Bay, had seen wolf-tracks leading north.

After we arrived on board, on October 5, the first thing to be done was to make new over-runners for the transport of the meat from the north. This work took us several days. On October 6 the sledges were fetched from the neck, and the mate returned on board.

On Tuesday, October 9, Baumann, the mate, Fosheim, Isachsen, Stolz, and Hassel started north. They were equipped for a fortnight, and took seven teams with them, one of them being a loose team. Bay was to have gone too, but the day before they started he had been seized with violent rheumatic pains in the back, and had to take to his berth instead, where he remained for several days.

The purpose of this expedition was to drive all the meat south-west to the mouth of a big river, which fell into the sea on the north side of the neck. It was to be fetched from there later in the year when there was more snow. Baumann and Raanes asked if they might remain to guard the depot, keep their teams, and try their luck bear-shooting. They received permission. The canvas tent which had been in use the previous year at Björneborg they took with them as a guard-tent.

A steady breeze from the north set in at this time; the weather

as a rule was clear, but the temperature sank rather fast. The colder it became, the more the wind blew down the fjord. With Schei's help I set to work to cut away all the running gear, and this we coiled, marked, and put down in the cable tier. It was a cold job working up aloft in such a cutting wind, but there was no help for it; it was a thing which had to be done.

It had been arranged that when the meat convoy returned Schei and Isachsen should take their teams down the fjord, encamp under one of the headlands there, and shoot bears. We had no fresh food whatever for the dogs, for since we left Havnefjord we had shot only two or three seals and no walruses. It would be a great thing to have fresh meat again this year as heretofore, and, weather permitting, there was still time for us to capture a little dog-food. With luck we might even get a few walruses out in the fjord.

After we had finished unrigging the vessel, Schei spent most of his time up on the talus, and considerable quantities of minerals came on board that autumn. He also made his preparations for the trip down the fjord, in order to be ready when Isachsen came back.

On Saturday, October 13, the party arrived from the north, all with loads as big as they could possibly manage to drive across the neck. The meat they had been unable to bring with them they had piled in a big heap, a little way up the river-valley north of the neck. This spot we named 'Nordstrand,' and the river consequently became 'Nordstrandselven.' Baumann and Raanes had taken up their posts as guards of the depot. They had made their tent very warm and comfortable by covering the roof and walls with the ox-skins, and few houses at home in Norway, I should fancy, are warmer than was theirs at Nordstrand.

During his solitary time there, Peder had had visits from a bear, and five wolves. The former he saw when he was out on a tarn getting cooking-ice, but before he had fetched his gun the animal was far away on the drift-ice. The wolves, on the other hand, had been regular nocturnal visitors, but they were so wary that it was impossible to get within gunshot. He had stolen out of the tent each time he heard them, but each time also saw

them in full flight. A tin with some blubber in it had proved an especial attraction; they returned several times to try and extract the contents, but without succeeding, as the little cover was bent inwards into the box. Probably when they began to



AFTER THE FIRE.

jangle and rattle the tin about they took fright at the noise, before they heard or saw anything of Peder.

We had left 'Basen' lying where he was shot, and the wolves also paid him a visit. The dog was frozen hard to the ground, but they loosened the body and dragged it away to some little distance, where they were gnawing it when Peder came up.

Before the wolves came to visit him Peder had had no peace day or night for the foxes, which had been ever on the alert for a chance to rifle the meat. As long as the foxes were about there were always great numbers of hares up under a hilly ridge, a little way from camp, but no sooner did the wolves appear on the scene than the foxes and hares vanished like magic. Whether they had gone away for good, or were only in hiding, Peder could not say for certain. The wolf, as my readers are aware, is no epicure, and will eat a fox as soon as a hare.

Some of the puppies which had been born that summer were shot on October 15, and their skins stretched to dry. Nödtvedt was to prepare them later in the winter, after which they would be converted into gloves, for we needed a good deal of skin for this purpose.

The following day Isachsen and Schei drove out of the fjord; they were provisioned for three weeks, but the dogs for only one week.

CHAPTER VI.

SNOWSTORM AND MISFORTUNE.

ON board our first business was to build a forge, and after that the dog-kennels. The over-runners of our sledges too had suffered much from all the trips across the neck, and we had to make new ones as quickly as possible.

The experience gained from these journeys across Gaasedalseidet taught us that the 'water-sledge' was the most satisfactory for work of the kind, and Fosheim at once began to make three more after the same model. This sledge had now been scraping over bare land for years, so that the steel plates were, as good as useless. Nödtvedt and Peder re-shod it; and as soon as the new sledges left Fosheim's hands they fixed the plates on them.

At this juncture we found ourselves short of material. Nothing suitable for sledge steel was forthcoming except some of the ice-saws, the blades of which were of unusually hard steel. These we had to sacrifice, but when cut into strips and welded together they provided us with particularly good plates.

The meat and skins were hung up in the after-cabin to thaw, and the meat was afterwards disjointed and sorted. The briskets and tongues were salted by themselves; and the kidney-fat, flanks, and various small pieces of superior excellence were handed over to the steward for the fabrication of sausages. The heads and hoofs were separated from the skins, as well as some of the suet, and the other parts which were not required for our consumption.

It had been my intention ever since we came into this fjord to make a journey northward to explore the northern part of 'Norskbugten' (Norwegian Bay). Several circumstances combined

to make it clear that from some place in Norskebugten a sound must connect it with Greely Fjord. The large icebergs we had seen during the summer in the eastern part of Norskebugten must have come from a long distance, and the fjords and mountains we had observed the previous year from Bay Fjord we had not yet succeeded in finding again on the west side. If there were no sound here leading northward it would be a very strange thing. At any rate, I was exceedingly anxious to explore the fjords there more thoroughly.

Olsen had never yet been on a sledge-expedition. This was through no wish of his own, but because the opportunity had never presented itself. I therefore asked him if he would like to come with me north across the bay. I need not say my invitation was accepted with alacrity, and he began to prepare for it at once.

On the morning of October 18 we left the ship, equipped for ten days only, for there was so little snow on the neck that we did not care to take with us more than was absolutely necessary. Besides, I knew that as soon as we got into the big fjords there would be plenty to eat both for us and for the dogs.

In my team at this time I had two young dogs, 'Sultan' and 'Rex.' They were also called 'Slasken' and 'Slusken' ('Rough' and 'Rascal') when we were in a bad temper. 'Basen' was gone, 'Lillemor' had a large litter of puppies to look after, and I thought it would do the young dogs good to be broken in a little during the autumn; I therefore took them, in the hope that they would know something by the time we began the spring sledging. 'Sultan' promised to be a first-rate dog. 'Rex,' too, was strong and willing to work, but was very tiresome, on account of his extraordinary timidity; being as frightened of the other dogs as he was of people.

We had beautiful weather the whole day, and crossed the neck with so little trouble that we reached Nordstrand in good time. There we met Baumann and the mate, by whom we were invited to dinner. They had made themselves exceedingly comfortable in the tent, thanks to the ox-skins, of which there were enough to put, one on the top of the other, on the roof and round the walls.

Outside the door they had built quite a roomy porch, where they kept provisions and things of divers kinds which they did not care to have inside. It would be still more comfortable when they had put up the inner tent which I had made for them, and now brought with me.

During the evening the weather cleared still more, and in the end became very fine. The full moon shed her bluish-white beams across the snow and ice; the precipices and chasms. It was as light as day, and so still—so marvellously still. Not a breath of wind was to be felt from any quarter, not a sound of life to be heard other than from our dogs.

We sat up late that evening; seemingly none of us wished to go to bed. We had so much to talk about, and the coffee was so delicious that it was past midnight before Olsen and I crept into our tent, although we had to be up early next day. Baumann was going across the neck to the 'Fram' to fetch a few small things which they had run out of, and Olsen and I had planned a trip across Norskebugten, first to Graham Island, and thence up to the big fjords farther north.

But we had drunk too deeply of the coffee—neither Olsen nor I slept a wink that night. At four o'clock I was up, and out to look at the weather. As it was as brilliantly fine as in the evening, we began to get breakfast ready at once; it was better to make the most of the day. There was no telling how long the good weather might be likely to last.

In the other tent the situation was pretty much the same as in ours. They had not slept particularly well either, and turned out about the same time, so that Baumann was ready to start even before it was light. He set across the neck with a fair load of meat on his sledge, although the snow had not yet hardened sufficiently to be very good for sledging purposes.

Olsen and I decided to remove the over-runners from our sledges and drive across the bay on the German-silver plates, and consequently we did not get off until an hour after Baumann had started. The mate was going to make use of the day to go shooting, and started at the same time that we did.

Just as I was driving down from the ice-foot on to the fine

smooth young ice with which the bay was covered as far as one could see to the northward, I suddenly perceived an ominous bank of clouds in the south. They had gathered suddenly, and looked so dark and threatening that I at once gave up the idea of crossing the newly formed ice on the bay. It was impossible to say how strong or the reverse it might be farther north, and I saw from the atmosphere that we were in for a storm. So I at once turned back to the ice-foot, thinking it wiser to drive along it until the storm broke, and we had an idea of what it was going to be like. To do this would not take us far out of our way, and it would be easy to turn out on to the ice again if the storm proved to be nothing much.

It was not long since the spring tides, when the water had risen far above the ice-foot. This now consisted of polished ice so slippery and smooth that in places the dogs could hardly get a foothold on it. No sooner were we on to the ice-foot than the storm burst. At various times I have seen storms come up suddenly and violently, but seldom one to equal this. It came sweeping across the ice at terrific speed. I thought, however, that being so sudden it was more of the nature of a squall, and would soon go down; in an hour's time probably it would be quite calm.

But herein I was much mistaken. The weather was not in that mood to-day. The gale increased without ceasing; later in the day it blew so hard that it was as much as we could do to keep our legs, while all the time the snow drifted and scudded to such an extent that we could hardly open an eye. But the ice-foot was polished and the gale abaft the beam, and on we flew before it. I knew the way, and it was no difficult matter to find it, even across the bays which cut deepest into the land.

We had just passed a bay of the kind, and had barely come up on to the ice-foot again when a gust of wind carried Olsen's sledge and team away across the ice like a glove. The sledge was thrown heavily against a block of ice, and Olsen was shot several yards through the air and came down on his shoulder. He was on his legs again at once, like a cat, but said that his arm hurt him so much that he could not use it; it was dislocated, he thought. I

told him that probably it was nothing much, and he would soon be better. The only thing we could do was to push on along the ice-foot as well as might be, for here on the polished ice, where there was no shelter of any kind, there was no possibility of pitching our little travelling tent in such a raging storm. On we drove, therefore, as hard as we could inwards, and Olsen made a brave stand, but his arm grew worse rather than better, and I myself began to believe that it was dislocated.

There seemed to be nothing for it but to camp, though con-



OUTER PART OF GAASEDALEN.

sidering all things this was easier said than done. In one or other of the sharp river-valleys hereabouts we could easily have found shelter from the wind, but who would camp in such a place when they risked its being filled with snow at any moment? We had not come north to be buried alive!

The fore-land, which extended mile after mile outwards towards the sea, was absolutely flat and level. Shelter was not to be found there anywhere, except in the valleys which furrowed the country like deep cracks in the floor of a room. The weather showed no signs of improvement, and I began to have doubts about

proceeding, particularly as Olsen's arm was so painful, so I decided to turn back after all, and try to find our way to Nordstrand. This was not so easy now that we had the wind against us, but the attempt must be made.

We therefore turned back, this time with the wind and drift right in our teeth. The dogs were often quite unable to stand on the steel-bright ice. All this was disagreeable enough for anybody

*Stolz.**Nødtvedt.**Fosheim.**Olsen.*

AFTER THE COALING.

who was intact, but for Olsen, poor fellow, with only one available arm, and suffering horrible pain in the other, it was bad indeed.

Our drive was anything but a pleasant one. If anything could have been worse it must have been the position we should now have been in had we ventured out on to Norskebugten. At best, if we had not gone to the bottom when the young ice was broken up, we should have been cut off from our friends for an indefinite length of time ; so that, despite all, we had reason to think ourselves lucky, inasmuch as we had noticed the storm in time. We

had a deal of trouble in finding our way, and it was only on discovering the Nordstrand river, after driving for some hours, that we felt sure where we were. Shortly afterwards we were at Nordstrand.

The mate had just come back from shooting. He, too, had almost lost his way, being unable to see anything in front of him, but, like us, he had been lucky enough to stumble on the river, and so was all right.

Being so few of us in camp we could manage with the station tent, and so, without waiting to pitch our own, Olsen was at once taken into it. When the dogs had been fed and the 'Primus' lighted we proceeded to take the clothes off our sick companion, and examine his arm. We felt sure at once that it was dislocated, but unfortunately all our attempts to put it in again were unavailing.

When our food was ready the mate and I did justice to it, but quite otherwise was it with our poor patient; he could hardly eat a mouthful. We threatened him till he had swallowed some broth, which did him good, and afterwards we induced him to eat a few mouthfuls of meat, but it was very little. We could not do for him what he most required, and he was very downhearted. He was afraid his arm would never be in place again, and that he would be maimed for life. We had no doctor. I tried to keep up his courage as well as I could by assuring him that as soon as we were on board again we would soon have his arm in place, but that here in the tent it was not easy to be a bone-setter.

Outside the storm raged with unabated strength, shaking and rattling at the hut until it creaked. At last it was time for us to turn in, but for Olsen there was little rest to be had; he did not close his eyes the whole of that night. It was some time, too, before I fell asleep. I could not help thinking about the dogs out there in the storm, and greatly hoped that none of them would be snowed down and suffocated, though what could be done to prevent it I did not know.

I think it blew even more next morning, if that were possible, when the mate and I turned out to see after the dogs. It was with great misgivings that we stamped our way across to them,

and our relief was great when we found everything in good order. They had stood the storm well, it appeared, and both the teams were lying in a mass, each in its place. We gave them an extra ration, disentangled the traces, and after doing all we could for them, turned in again. About five o'clock the mate was out again. The wind had changed a little by then, and the snow had drifted so much that my team were only just able to keep on the top of it. Close by was a large over-hanging drift more than six feet high. They had mounted and mounted, and now had literally got to the end of their tether.

'Sultan,' who had a perfect mania for entangling his trace, was tied up a little way from the others. Of him we saw not a sign—he must be many feet under the snow. We fetched spades and dug like navvies; worked for two or three hours with the sweat of our brows, but all our efforts were in vain. For every spadeful of snow we shovelled away at least as much fell in again—it was an endless and fruitless task. Hard as it was to lose a dog in this way we were obliged to give up, and consoled ourselves by the certainty that, had we found him, he would have been dead long ago. We ended our work and let the snow keep its prey; but we took the precaution to move the other dogs to a place which I thought fairly sheltered against drift before going back to our warm tent.

The night that followed I shall never forget. I have experienced many a stormy night in the polar regions, but not many like this. It seemed almost as if the end of the world had come!

In the morning when the mate tried to go out of the hut he found that we were entirely snowed up, and he had to break through the roof of the porch and shovel a way out from there.

Over the whole of the large hollow in which the tent stood lay an even sheet of snow, several yards deep. Of the great stack of meat, about nine feet high, we saw not a trace. We knew our sledges were standing somewhere near it, but we were not quite sure of the place, and it had really never occurred to us to take their bearings.

Worst of all, however, was that my dogs were quite snowed down. We saw a little of the backs of four of them, but of

'Lasse' there was not a sign. At last we found him with eight inches of snow on his back, lying exactly as he had settled down in the evening, curled tight round, as dogs do in stormy weather. He was dead.

To this day I cannot make out what was the matter with the dog that he allowed himself to be suffocated by such a thin layer of snow. Strong as 'Lasse' was it would have been a very easy matter for him to shake it off. Most remarkable of all was that he had not made the slightest attempt to rise from the place where we found him lying.

Olsen's dogs were all right; then came the sledges' turn. We provided ourselves with a pole apiece, and began to poke for them, but this performance went on long before we came across anything. In the end, of course, we found them, but digging them out was a bad business, and took us nearly the whole day. When, after much labour we succeeded in recovering them, we dragged them up on to a mound to prevent a repetition of the episode, and tied up the dogs under their lee.

The storm did not rage quite so violently that day as on the previous one, though there was no question of our going out of the tent for any distance.

This was a bad state of affairs for Olsen, who was, of course, the chief sufferer. His almost intolerable pain left him no peace either day or night, and he hardly knew what to do with himself. The greater part of the time he spent kneeling with his head on the sleeping-bag, but he had plenty of self-command, and not a word of complaint escaped his lips.

Later in the evening the wind dropped, and after midnight it almost ceased to blow. At four o'clock Raanes and I turned out and made breakfast, fixed the over-runners to the sledges, and got ready to start. I had decided that the mate should come with us across the neck, and that we would drive with almost empty sledges. While we were getting ready we observed that the ice on the bay had broken up, and that there was open water from the sound to a long way north; judging by the sky even north of the islands.

When everything was in readiness for the start, we dressed

Olsen in a full suit of wolf-skin clothing. During these stormy days we had had plenty of time to dry and see to our furs, and we had made the most of it.

It can have been no pleasure to be Olsen that day. If he sat on the sledge, it hurt his arm every time the sledge jolted against the steep, wind-hardened drifts; if he walked, his arm pained him at every step. He tried both ways, and chose the former—the pain was about the same, but he would get back quicker by driving. We reached the ship a little past noon.

I had felt some anxiety about Baumann also, as he must have come in for a certain amount of the bad weather on his way across the neck. He had, however, reached the ship safe and sound the same day. His early start had been a lucky thing for him, as he had crossed the watershed and reached Gaasedalen, where all was plain sailing, by the time the storm broke. He no longer regretted the coffee which had kept him awake at night.

As soon as we arrived on board I set Simmons to find some of the doctor's books and see what we had better do for Olsen's arm. We found some diagrams and various directions as to how a dislocation should be reduced, and after some consideration chose the way which seemed easiest and most simple.

The operation would have been easy enough had we dared to chloroform our patient, but we had no desire to attempt such a thing. What were we to do? Several days had elapsed, and the arm was swollen and angry. Inexperienced as we were we should probably torture poor Olsen most horribly before we got his arm into place again.

I therefore decided to make him thoroughly drunk—the effects of *that* we could better grapple with. For this purpose we first tried naphtha, but that did not do; he disliked the taste of it so much that I could not bring myself to force more on him. Good—we had other things that tasted considerably better. I entered into partnership with the brandy fiend; sent for a bottle of the very best Cognac; and began to give him dram after dram. But it really was too much to expect him to drink himself half-seas-over on dry nips all alone, without any other diversion, so I sat down and talked to him about everything I

could think of. At first he was very much taken up with his arm, but from that we went on to the expedition in general, then to shooting in general, and lastly, after innumerable excursions, landed in the Lofoden Islands, in which as a Nordlænding he was much interested, and had himself taken part in the fisheries there.

In this way I brought him little by little into brilliant spirits; he grew livelier at every dram. Fosheim and Simmons, who had been chosen for the deed of bone-setting, sat awaiting the pro-



'Stubsa.' 'Searte.' 'Obersten.'

FROM BAY'S TEAM.

pitious moment, following with much excitement his various 'stages of development' during our potations, while I talked myself blue in the face to get him to drink more, and hasten on the crisis in this tragi-comedy.

It was not long before Olsen himself began to be highly pleased at the whole performance, declaring it was the most amusing entertainment he had ever taken part in!

When he had swallowed something like half a bottle of brandy we thought he must be about ripe to be taken. We accordingly

placed him on a chest, and the bone-setters began their work ; but no—the arm would not go in. In his semi-conscious condition Olsen took the whole thing with the greatest calm, and said nothing when Fosheim and I then tried our hand on him. To our surprise we were successful at the first attempt ! That it was with unspeakable relief we heard the crack of the arm as it slipped into its socket, I need hardly say. As for Olsen, notwithstanding all he had taken down, it had not had much effect on him while we were doing our worst—the pain and excitement had kept him sober—but the instant the arm was in its socket he became dead drunk.

He was carried to his cabin in a hurry, put to bed, and a man set to guard him. We thought perhaps he might become delirious, or something of the kind, for, as I said before, he was not *quite* sober. Fosheim took first watch. But Olsen behaved nicely the whole night, and next morning was quite himself again. We bandaged his arm so that he could not move the joint, and thus he was to go for three or four weeks.

Olsen's happiness, as he went about with his arm in the sling after his successful cure, was quite touching to behold. He had not had the slightest hope about himself, and during the agony he went through had painted the future in very gloomy colours. If Olsen was glad, we quacks were no less so, and proud into the bargain. We had discovered a brand-new Arctic surgical treatment, with the brandy fiend himself as assistant. But it is ever the same : genius is simplicity, and evil for evil is only fair play.

On October 23, the day after we returned on board, Baumann and Raanes went back again to the depot at Nordstrand.

CHAPTER VII.

BEFORE THE POLAR NIGHT.

IN the provision-hold aft we had a quantity of foodstuffs, various kinds of which were required for almost daily consumption, but every time the hatch was raised at the cold time of year, ice formed in the holds and on the tin boxes containing the provisions, so that each spring we had a great deal of trouble to scrape it all away. In order to avoid raising the hatch oftener than was absolutely necessary, we took out every autumn as much as we thought sufficient for the winter, and stowed the provisions in the lockers in the 'tween decks. It was at this work that Hassel and Stolz were occupied just at this time.

It was, however, not entirely on account of the ice that we did this, but also in order to have the provisions more at hand in case of fire. For the same reason also we used every autumn to place a large amount of provisions in a more easily accessible place than the main hold.

The weather was still changeable as before, and it did not seem likely that Isachsen and Schei would be able to shoot much game out at the mouth of the fjord. The only tolerable weather we had had was the day the mate and I had come on board with Olsen, and the first part of the following one. In the afternoon of that day, October 23, we had the same weather over again—wind from every possible quarter, one storm succeeded by another, and the air so thick that we could hardly see a hand before us.

I was exceedingly sorry that the weather was not better. It had been my intention to go north again as soon as Olsen was on board, in order to try to see something of the big fjords this autumn. It would be of great advantage to our work in the

spring if, before we began on it, we could know a little about the country up there. But the weather put a stop to all such plans, though for that matter we should have met with nothing but open water across Norskebugten. The little strip of ice we had seen along the shore on the way from Nordstrand had, of course, long since been swept away.

Our smiths, Nödtvedt and Peder, had been busily engaged making bars of steel to be put as plates under the sledges. This task accomplished, Peder had some screws and nuts to groove, and when a sufficient quantity had been done he, Stolz, and Hassel began on the kennels. Bay, who was preparing the ox-skins, put off his work and joined the builders, returning to it again later, with the assistance of the mate, Peder, Hassel, and Stolz. Fosheim and Nödtvedt shod the sledges; among them being a new sledge made by Fosheim. As he had also mended up our old 'water-sledge,' we had now two steel-plated sledges which could be used for transporting meat across the neck. For the other sledges which were to be used for this purpose, he made wooden over-runners, and later on built two more transport sledges on the same principle.

On October 27 we had fairly reasonable weather; so far fine, at any rate, that we saw the sun at midday, though it only just rose above Middagskollen. Even if we had clear weather the next day, the sun would hardly be visible above the hill, but as it was quite unthinkable that we should have two fine days in succession, so inclement as the weather had been all the autumn, we thought we might as well bid farewell to it on the 27th.

The following day Isachsen and Schei came on board. They had camped at the eastern cape, and had been out early and late on the look-out for game, but the protracted bad weather had destroyed every hope of a bag. They had not shot a single animal, and despite unremitting scanning, had not seen more than one animal—a fox—since they left the ship. It was the only living thing they had set eyes on the whole of their expedition, except the dogs and themselves.

On arriving at Jones Sound they had found the sea free of ice

and the same was the case as far south and west as they could see. Then southerly gales began to blow, and some ice had drifted north, so that a strip remained lying along the shore as far as was visible in a westerly direction. This belt, however, was not so broad but they could see open water on the south side. When the weather had allowed of it they had done some sledging, and Schei had thus gone to Ytre Eide and Hvalrosfjord.

To make up for their meagre bag at the eastern headland they now suggested going a trip north for a few days, to the north part of Hell Gate. They must assuredly be able to get a



A DISTURBANCE DURING A HALT.

bear or two up there, if nothing else. I had no objection to their going this trip, though I did not cherish any great hopes of ultimate success, as the weather would probably continue to be as bad as it had already been. However, it might be worth an attempt.

The day after their return, accordingly, they began to make fresh preparations, and started off the following day, Tuesday, October 30, with provisions for a fortnight. We had had a fairly slack breeze in the morning, but no sooner had Isachsen and Schei set off than it began to blow harder, and later in the day the weather was anything but pleasant.

It cleared, for a change, on October 31, and the day was spent in driving blocks of ice to the kennels, the work progressing rapidly. Everybody was so taken up that I thought the day, which was my birthday, would pass unnoticed. But in this I was mistaken; there were many who remembered it, and it was kept as was usual with these occasions. The evening passed very pleasantly, and we did not separate until past twelve o'clock.

I was the recipient of many gifts; among others, a hammer and some caliper-compasses, both home-made in the 'Fram's' smithy. My most important present, however, was from Fosheim, who enriched me with a whole keg of tobacco! So provident had that man been since he left home, that from the abundant store he then brought with him, he was able to give away a whole keg of such a valuable commodity.

On November 1 Peder began his ice-gauging for the winter. He did it in the same way as previous winters; that is to say, measured the ice in different places and at regular intervals; in some places every tenth or fourteenth day, in others, every month.

By November 4 three kennels were complete, and the builders then set to work on some for Fosheim's team, as he himself had been entirely taken up with other things, and had not had time to think of his dogs.

On Monday, November 5, Peder, Hassel, and Stolz equipped for a journey to Nordstrand to fetch meat, while I went a reconnoitring trip up the valley to see what the snow was like and find the best way for them. The following day we had breakfast at seven o'clock, and the caravan set off a little before eight. I went with them as guide for a way, and we covered the ground quickly northwards through the valley. They returned about four the following afternoon, along with Baumann.

Baumann and Peder each drove from the depot five half-animals, and Bay, Stolz, and Hassel four each; in all twenty-two half-animals. But up at the watershed the three latter had driven themselves into some grit-hills and heaps of stones, and had had to leave part of their loads behind—namely, two, two, and a half-animal respectively—consequently seventeen halves were

brought on board with them. The following day the remainder was fetched and conveyed safely on board, despite high wind from the north.

On Friday, November 9, Bay, Hassel, Stolz, and Peder again drove up to Nordstrand, taking with them Baumann's dogs as a loose team for the mate. All five returned the following day, bringing with them all that remained of the meat, and everything else we had left north; the only thing they had not managed to bring was a fifteen-gallon barrel of paraffin.

As the meat was brought on board it was hung up in the fore-cabin to thaw, and was afterwards cut up into joints and sorted. The flanks, tongues, and briskets were each time handed over to the steward for further treatment.

I decided to have a barrel of meat salted, and take it back to Norway as a delicacy for the owners. We had no saltpetre, it is true, but that was a matter of no consequence, for Schei and Simmons at once undertook to make some, and during the course of the afternoon the meat was salted down according to the most approved methods, with sugar, saltpetre, and divers other ingredients. It was prime fat meat, so I had every reason to think it would be a success.

On the afternoon of November 9, Schei and Isachsen returned on board. They had come by way of Nordstrand, and brought back some of the meat with them. They also brought the sad news that 'Messaline,' 'Svarten,' and 'Tigeren' had died of frost-bite and bad weather.

Northward, along Norskebugten, there was blue sea all the way from the sound to Graham Island. At Nordstrand, too, they saw nothing but open water the whole way north. Where the ice had gone to it was impossible to say, but certainly Olsen and I were lucky when we gave up driving across the young ice on the bay; had we done so, we should have been a good way from the 'Fram' and our friends on board by this time.

The winter now came on apace. Again the north wind swept swift and strong down the valley, and out through the fjord; and the more it blew the colder it became. To begin with, we had -33° to -35° Fahr. (-36° to -37° Cent.), but later the mean

temperature was -40° to -57° Fahr. (-40° to -50° Cent.). Day after day the wind blew with merciless strength; sometimes as a stiff breeze, sometimes as a gale, with a velocity of 32, and even 52 and 56 feet per second. The air was clear, but the fjord and valley smoked with the snow that was whirled up and about; and as the ship lay broadside to the wind we soon found it growing fairly cold down below. In the corners on the weather side of the cabin a quantity of ice and rime formed where a



THE FIRST SMITHY IN GAASEFJORD.

crack let in a little cold air. It now became a question of protecting ourselves to the best of our ability.

As usual on the approach of winter we put tarpaulin covers over the skylights, and banked them round with walls of snow; but on the inner side we now nailed in addition some old sleeping-bags, which for æsthetic considerations were furthermore covered with sailcloth. Before all the doors too, which were not in constant use, we likewise nailed old sleeping-bags.

Then, too, there were our four-footed friends to be remembered.

They required altogether about a dozen kennels, so that we had our work cut out for us. We set about them with all speed, and soon had them ready.

The dogs, on the whole, had not been very happy this autumn. They had felt the continual stormy weather very much, and many of them were reduced almost to skin and bone; so from this time onward we began to feed them better than we had done before. We went through their provisions, and found that we had so much biscuit left that we could well afford to increase the biscuit ration from three and a half to five biscuits a day for each dog. As we had not a scrap of fresh meat left for them, we made a hole in our store of fat, and gave them alternately biscuit and fat, and fish. It was not long before we had the pleasure of again seeing them thriving and increasing in weight.

As soon as the kennels were ready our old winter regulations with respect to the dogs entered into force—out on the ice every forenoon from nine to between twelve and one, and the rest of the twenty-four hours indoors. They lived with much greater harmony this winter than heretofore, and hostilities were a rarity. An occasional disturbance among them, when such took place, was generally some slight disagreement within a team; the old violent feuds between the teams seemed to have died out. Probably they thought that having fought so long and so thoroughly they could make a pretty fair guess as to which of them was likely to come off best, and consequently the interest of novelty was wanting. But it was not impossible that they might begin again as soon as the days grew lighter.

Again this winter there was a great deal of work of various kinds to be done before the spring came round once more—more than enough, indeed, for both cabins were so full of workmen and their tools that it was hardly possible to move in them.

Olsen took in hand the odometers, the woodwork of which had to be renewed, though the mechanism and the wheels themselves were in fair order. We also required a third odometer, and this had to be made entirely new. Among many other larger and smaller instruments which Olsen had orders for I may mention two alidades. The theodolites had to be polished, and



PLAYTIME.

the big universal instrument which had not been used since we were in Godhavn required a rub-up to prevent it from rusting.

Then there were the sledges. In addition to a great deal of smith's work of another sort—such as putting in a new stove-pipe instead of the old one, which had become dangerous—Nödtvedt had an order for plates for a good many of the sledge-runners. Fosheim had orders for all sorts of carpenter's work, but was chiefly occupied with the sledges, which all required seeing to, and many of them mending. We had discovered that the upward bend of the runners was too thin, and they were accordingly taken off every one of the sledges, the thickness of the wood added to, and the runners re-shod with the German silver. The wooden bows connecting the two runners, as made in Christiania, had proved to be too slender. They were now taken out of each sledge and a new bow put in, of double or threefold slats of wood, one curved on the top of the other, the whole thing being afterwards marlined. Fosheim also had the contract for new runners and cross-pieces for the sledges; also for new tent-poles, the old ones having proved to be far too slight for our use.

Nobody envied Fosheim his work, which was the coldest of all. His workshop was in the 'tween decks, and bad as the cold had been out there the previous winter it was still worse this. A temperature of -17° Fahr. (-27° Cent.) was not uncommon. Try it, who will! I cannot imagine anybody finding it pleasant to stand day after day at a carpenter's bench in between forty and fifty degrees of frost. Fosheim became well used to it in course of time, though he had never been tender. As far as I heard, not a word of complaint on the score of it ever passed his lips.

There was also a vast amount of sewing to be done that winter. First and foremost came the great sleeping-bag question. The bags we had brought with us from home, and which we had used on all our journeys hitherto, were worn out, so that an entirely new set had to be made. A certain amount of weight is of course saved by using two-man bags, and it cannot be denied that they are also considerably warmer, but all the same they were not very popular, and most of the expedition were decided in their preference for single bags. As the slight saving of weight

was not really a matter of great importance to us, and we had material in abundance, I let each man take his choice in this respect, and together with Schei—later also with the mate's assistance—started to make a set of each kind.

After the experience we had gained in this matter, I made up my mind to try a different shape, so these new bags were accordingly made a head shorter than the others had been, and reached only to the shoulder. In the hood we made an aperture large enough to put the head through, and this we edged with a strip of reindeer-skin about four inches wide, which formed a sort of collar. We could then, if we liked, pull our fur caps down over our ears, or if it was unusually cold cover the face with a bit of fur. It was clear that by this arrangement we should avoid a great deal of the moisture we had found so troublesome.

With regard to the rest of our work, our wolf-skin clothing was put into thorough repair. Hassel and Stolz were told off to prepare the dog-skins which were to be made into over-socks and gloves, and they also stretched some seal-skin, which was destined later to make soles for the 'finsko.' Finally, Baumann had an order for a silk tent with its accompanying inner tent.

A new camera was among the things we were obliged to have. We had used up a great number of plates belonging to the usual travelling apparatus, but still had a quantity of $12 \times 16\frac{1}{2}$ plates left. The camera intended for their use was so enormously heavy that it was an utter impossibility to drag it with us on long sledge-journeys. Schei was, therefore, set the task of making a new travelling camera, and he accomplished it well.

When I furthermore mention that the tide-gauge was put down as soon as the dogs had got their kennels; that the observations with it and the various other appliances went their even way; and that Baumann this winter, as one of the previous ones, held a well-attended course in navigation, the reader will have gained a general impression of our winter life on board the 'Fram.'

And yet it was nothing of all this which set its mark on the first part of the winter. It was, as we shall soon hear, something of a very different nature.

CHAPTER VIII.

A WOLF WINTER.

NOVEMBER 22 was Fosheim's birthday, and therefore, of course, a day of mark in his existence; but that it should also prove a day of mark for us all was something quite beyond our expectations.

The day was celebrated in the usual manner. We sat in the fore-cabin, made speeches, drank hot grog, played cards, and amused ourselves in various other ways until a little past eleven. Bay had the meteorological watch that night. Half an hour after the others had turned in he went up to take the midnight observations. But he came running down a great deal quicker than he went up, calling out that there were two wolves close by the ship's side. He seized his noted Buchsflinte and rushed up again, about the same moment that Baumann also ran up, though without his gun.

There was a shot. I hurried up, and was just able to distinguish Baumann and Bay out on the ice. They were standing close beside an animal which appeared to be as dead as according to human notions it could possibly be; but this was not enough for Bay, who gave it another, not to say two shots more, before he was satisfied.

I thought the situation required rather more elucidation, and so ran down to the 'tween decks after a lantern. By the time I was up again the two were dragging their quarry up the ladder. I was not a little surprised when I saw the animal they were bringing up. It looked exactly as if 'Storlurven,' one of Stolz's best dogs, had been made to 'bite the dust' to satisfy Bay's love of sport. But happily I was mistaken; the wolf they were dragging up was real enough, if only a young animal.

The wolves had visited the refuse-heap, but had been alarmed at Bay's appearance on deck. They had moved a little way forward, and when close by the ladder Bay had shot at and killed one of them. That they should have visited us was not at all remarkable; we had come across their tracks several times in the course of the autumn, and Schei had once seen as many as five together, but it was remarkable that, on the whole, Bay hit his mark. He was using a rifle, and it was fairly dark. He must himself have been rather astonished at the wolf's prompt demise,



VIEW OF FRAM FJORD.

or he would never have spoilt the skull with two unnecessary shots. I will lay ten to one that in ordinary circumstances our friend would have shot wide, and I have a strong suspicion that the effects of the birthday enthusiasm had their full share in his nocturnal success.

The 'Fram's' quiet aspect was suddenly transformed. Nothing more was required to rekindle the fever of speculation. The night-watches were soon at a premium, and buying and selling took place with eagerness. Those who speculated in the first watch were, however, grievously disappointed; and the disappointment of the first night was followed by others. The thieves were seen

and heard, first by one and then another of us, and many a good cartridge was sacrificed to these phantom wolves, but with little enough result. Bay, so far, was alone in his glory. There was hardly any holding him now!

As for the wolves, they soon discovered that straying amid the shots from the 'Fram' was no perilous pleasure. When a gun



Lindström.

THE CHRISTMAS-TREE IS DECKED.

was fired off they ran a little distance away, but soon came stealing back as if they had never been frightened. We could hear their pattering footfall around the ship, but without seeing them, and at times heard their weird and uncanny howling.

Meanwhile Bay and I had skinned and skeletonized the wolf he had shot, and salted down the skin and the bones. The rest we gave to the dogs, but they scorned the flesh of their heathen

cousin, and would not touch it. This was rather curious, as they had quite a liking for fox-flesh, and were not averse to eating each other.

As time went by, and wolf-shooting became more and more of a problem, there was a steady decrease in the demand for night-watches; and when the wolves kept away for a week, they sank so rapidly that there was no market for them at all—in fact, had any one been generous enough to suggest giving his away, I do not think he would have found anybody willing to accept it. The wolf-period proper was not until later. When the moon began to shine these evilly disposed animals were often to be seen about the place.

One of the most favoured in this respect was Isachsen; he had a chance of firing at them five or six times. Baumann also had his chance. The beasts generally appeared two or three together, but by the time we reached the deck they were far away across the ice, or perchance would be sitting on the talus, near the ship, howling dismally; while the dogs responded in the same key from inside the kennels, or the deck. It is striking how similar is their howling.

One of the first days of December, Nödtvedt, on going up on deck about nine in the evening, saw three wolves busily engaged at the refuse-heap. He ran down for his gun, and some of the others, seeing what was up, followed him on deck, but the wolves had already taken flight, and in the half-clear moonshine could be seen a couple of hundred yards away on the ice. Of course they were peppered—with due regard to economy—but without effect.

Later in the evening Isachsen and Nödtvedt went out to look for them. They saw one of the animals, but the darkness of a polar night is not exactly the best light for rifle-shooting; and also it was impossible to get within reasonable range. The wolf kept at a distance, though it was evidently curious to see what the beings were which thus dogged its footsteps. How long this ramble would have lasted it is difficult to say, but its fellows up the valley appeared to be growing impatient, for they began to howl and whine. It then went off to them, and disappeared for the night.

After this there was another run on night-watches.

We now saw that shooting was of no use. No more birthdays were at hand, and Bay did not think it worth while to try his luck too often. He knew what he was about. It was plain we must go differently to work if we meant to get hold of any of these rascals, and we began to think about other methods of capture.

We tried placing snares by the refuse-heap, which was their paradise: they refused to go into them. After that the mate, Peder, and I put a gin out on the point. In the moonlight it looked like a gallows, and the point consequently came to be called 'Galgeodden,' or 'Gallows Point.' But the wolf is a cautious general; he walked round the snare, and probably studied the apparatus as deeply as we did when constructing it, but he kept at a respectful distance.

So snares were given up; and we came to the conclusion that traps would be the thing, but material to make them with was the difficulty. We could not afford new wood; ice was dismissed as useless, seeing that these creatures have a special faculty for scratching their way through anything of the kind, and stone it was impossible to get hold of. But then Olsen and Fosheim persuaded some one to give them two of the big boxes in which the fat was kept, and these they joined together, lined with tin, and furnished with doors which were heavily weighted with lead. The trap was then placed out on a large sandbank, on the east side of the fjord.

Stolz and Hassel hit on an entirely new patent method of their own. They fished for them. They baited an enormous halibut-hook with blubber, and in the afternoon, when the dogs had gone back to their kennels, threw it out near the refuse-heap. The hook was attached by a long line to the clapper of the ship's bell, by which means it was intended that the wolf should give notice when it was hooked. It really happened once or twice that one of them took the bait, but as a wolf never eats its prey on the spot, but always takes it a little distance away before beginning to gnaw it, the line was tightened, and the whole of the alarm apparatus in full swing before he had hooked himself. The

terrified wolf would then make off as fast as his legs could carry him, and when his expectant capturers came hurrying up on deck, they, at best, saw him flying for his life on the ice. But, anyhow, the 'Greylegs' were so shy that we could hardly set foot on deck before they were off.

I need hardly say the wolf-fishing contrivance was short-lived.

But on board the 'Fram' lived others besides two-legged beings. The whole pack of puppies had their playground on deck, partly because they were too young to be out on the ice on their own account, and partly because we were afraid of the wolves for them. Therefore one fine day, when these small creatures were playing about, poking their noses into everything as usual, they discovered that they had only to touch the line for the bell to ring. After that it was a never-ending source of amusement to them to ring it, and the fishermen were kept on the go night and day.

At nights, when the bell began to peal as if the country was in revolt, and a half-awakened wolf-fisher rushed up on deck, he would see a wretched little puppy sitting quietly nodding its head to and fro as it made snatches at the bell-rope. It was not an inspiring sight for a hot-blooded sportsman! But no raising the line seemed to be any good; somehow or other they always managed to get at it again.

When Olsen went to look at the trap on October 6, he found that the bits of blubber which had been strewn about on the ice outside it had disappeared. When he came to investigate the trap itself, he found the door had been thrust in. Aha! Here was a wolf, he thought—the trap wasn't such a bad idea after all! He returned on board at once, and told Fosheim what had happened.

They started off forthwith, taking a sledge with them on which to bring the trap aboard, but they must have looked decidedly crestfallen when they discovered that the wolf had tricked them, and not they the wolf. It had first eaten the bait on the ice, then gone into the trap and devoured all that was there, and finally had scored off the inventors by eating up the rope which held the spring. After thus having eaten all that the house provided, and more than that, it had quietly lifted up the trap and gone out, and had even had the politeness to shut the door after it.

This was a sad disappointment for Olsen and Fosheim, but having bought their experience, they proceeded, nothing daunted, to make use of it. They put an iron bolt to the door, and a spring which pressed in the bolt when the door fell down.

The next night the wolf was about again. The pieces of meat round the trap were soon eaten up, and after that what was on the floor of the trap, but the bait itself was carefully avoided. For obvious reasons nothing was said of the wolf's second appearance; nobody was told except myself, and I shall not give them away.

The gin at Galgeodden was no more successful than Fosheim's apparatus. We therefore changed it to an ice-trap, but the wolves did not come any the more for that.

On the night of Friday, December 7, Fosheim and I slept in a three-man tent up by the forge to try the new sleeping-bags. Nobody went to look at the traps in the morning, except Olsen, who walked across the ice to his and Fosheim's. But this time there was really an occupant. He ran back breathless to impart the news. The trap was conveyed on board and inspected—a wolf was in it, sure enough.

The excitement was great; all the men aft set to work at once to make a cage of planks, which they lined with tin to prevent the wolf from gnawing a way out. We had hoped to finish this in the course of the Saturday, but it was not done, and the wolf had to remain in the trap till Monday. It had room enough to move about in the two boxes, but it lay quite still, evidently too frightened to stir. The food which we threw into the trap it took no notice of at first.

On Sunday, Fosheim, the mate, and a few of the others went up to have a really good look at the prisoner. They opened the door as wide as they dared, and peered in, but who shall describe their astonishment when they saw that the wolf had turned into two! How this had happened it is difficult to say, but the fact remains that there were two full-grown wolves in the trap.

We gave them plenty of meat and fish to eat, but they did not move all day. In the night, however, we heard them pacing round in the trap, and beginning to gnaw the frozen meat. They were

not the best of friends, apparently ; at any rate, they snarled at each other, which is not usually a sign of friendship.

On Monday they were turned into the cage, which was placed in a sheltered part of the deck. One of them had spots of blood on the back, and appeared to have a wound in the fore part of one of the shoulders. How it had come by it we could not quite make out, but possibly it was a wound from a grazing shot, or from the horn of an ox. The wound did not seem to trouble it much, for it was the more lively of the two.

An endless string of guesses arose with regard to their sex ; if I am not mistaken it was even made the object of wagers. But months, and even a year, went by before we felt any certainty in the matter, though most of us were of opinion that they were a pair, and this proved to be the right one in the end.

Herewith the wolf-period was concluded.

CHAPTER IX.

CHRISTMAS AND NEW YEAR—A BOLD FOX.

CHRISTMAS was drawing near, and the steward began to be busy again. As a rule it was late at night before he could allow himself a few hours' rest. Not but what he had had plenty to do when all the meat came on board, and at other times, for he had salted down at least two barrels of dainty galantine, brisket, and other delicacies, which, besides the ham we already had, were intended to be served in slices for breakfast.

But it was worse now, I think, than it had ever been before. He had been ill in bed the previous Christmas, and this time meant to have his revenge. Like the rest of us, he thought we might be homeward bound in the autumn, and that this would be our last Christmas up here. In addition to all the baking and cake-making, he meant, somehow or other, to rig up a Christmas-tree. We had with us a number of ornaments, of which many had not been used, and the steward could not harden his heart to the prospect of taking any home. His fixed principle was that what had been 'brewed for Christmas should be used for Christmas.'

One would not suppose that decorating a Christmas-tree was by any means a deed of darkness, but Yuletide preparations seem often to be best done in the dark hours of the night, and this we also experienced in King Oscar Land. It was quite a moving sight to see how manfully the steward strove night after night to preserve his secret, but, of course, his efforts were in vain; we were all far too curious to know what he was about.

A spring cleaning took place aft, and all the cabins were washed out. The zealous steward had also set his heart on scouring and scrubbing the fore-cabin, but I thought it would be a

waste of soap and water. On the other hand, I did think it more necessary that after Schei, Baumann, Bay, and I had successfully brought to an end an extensive lamp-cleaning that we should take in hand the brass round the stove and the stove-pipe, for it had hardly been touched since we left home. It was an exhausting bit of work, but we had the satisfaction of seeing it shine like Bay's face after the job was done.

The cabins were decorated with flags and pennons as usual.



FROM THE REFUSE-HEAP.

As far as the fore-cabin was concerned, they were carefully disposed in the places where the walls were in the worst state of repair—a beautiful thought.

Christmas passed pleasantly and peacefully—normally in most respects; but as usual at Christmas-time our systems showed socialistic tendencies and demanded an eight-hours' day, went on strike when the demand was not complied with, and took a holiday like ourselves. The only extra preparation this year was that Olsen and Nödtvedt made some German-silver dram cups, and tea-spoons of tinned copper for our toddy.

It was a comfort to know the 'Fram's' stout oak timbers were between us and the winter outside, for it was Christmas weather that swept everything before it. The north wind blew at the rate of 40 to 46 feet per second, nay, even up to 59 feet, and that abeam, while the mercury froze and left it to other, less chilly, substances to show from below -40° down to -57° Fahr. (-40° to -50° Cent.).

When the weather was reasonable enough to allow of our putting our heads outside the door, we made several small excursions near the ship. The mate and I thus went a little way up Gaasedalen, to see if we could find any big game, but up on the wastes where there was herbage was also an even sheet of snow—quite thin, it is true, but packed as hard as ice by the wind. No matter how many oxen had gone there, we could hardly have seen their tracks. But for that matter, it was so dark we should not have discovered the animals themselves had they been any distance away. We took this opportunity of cleaning our traps, for they were full of drifted snow. A fox had paid a Christmas visit to one of them. It had burrowed its way in through the drift till it reached the bait, and having eaten it had quietly gone out again, as the snow prevented the door from dropping. The Arctic fox was not far behind his cousin, the red fox, in courtesy, it appeared.

Fosheim and Olsen also cleared their traps, but did not find the sign of a wolf. They thought the time had come to set their fox-traps, which they accordingly did, and it was not long before 'Mikkel' went into one and was caught. They took the fox on board, and turned it into the wolves' cage.

I thought to myself when I heard this that there couldn't be much left of the fox by this time, and went up on deck to attend the funeral. Not a little surprised was I when I saw it walking about the cage with a superb air of possession. It entirely overlooked the wolves, appeared quite oblivious of their existence, and if, as happened now and again, they turned their heads towards it with an air of friendly warning, it snarled at them so alarmingly that they promptly hid their diminished heads. If it wished to be in any particular spot already occupied by a

wolf, it calmly lay down on the top of it, and was allowed to do so with patient acquiescence. It was altogether the most extraordinary animal, and grew bolder and more assuming every day. It became so irritable at last that it went for the wolves if they as much as looked at it.

The fox soon discovered that it was warm and comfortable on the wolves' backs, and took to lying there habitually. It was in no way disturbed if the wolf got up and moved about the cage, but remained where it was and let it walk about with him on its back.

As time went by, I began to fear that this tyrant might lose his prestige, or irritate the wolves into making a sudden end of him. I noticed several times that when the fox became more than they could endure, they opened their great maws over him, but always so gently that it never did him the least harm, and 'Mikkel' continued as imperturbed and impudent as ever.

A little later on Fosheim and Olsen caught another fox, which was put into the same cage, but its courage was by no means of a high order, and it was hardly to be wondered at, considering the way it was hounded about by the old fox. He was a fellow who would stand no rival; who made the laws for the little community inside the cage; but held himself exempt from them.

On January 3 we returned to harder fare, workaday clothes, and our divers occupations.

After making various tools which were necessary before the sledges could be shod with German silver, Nödtvedt gave place to Fosheim and Peder, who were to bend the runners into shape before the plates were fixed on. There was a great rigging up of a boiler and steam-pipe, with the necessary appurtenances. The runners were put in the pipe, steamed, and bent. After this came the glueing and riveting-on of the plates, and then a general looking-over and repairing of all the old German-silver plates.

It is of the greatest importance that the plates should be laid as close to the runners as possible, and I will here give a brief description of the method we used to obtain this result.

The two extremities of the plate were first of all attached to the runner, after the latter had been stretched as much as possible, so that when the bend sprang back into place, the German silver would be very highly strained. The runner with the plate on it was then put into two clamps, which were curved at the bottom, corresponding to the under side of the runner, and had screws above and at the sides. Between the German silver and the bottom of the clamps we placed a plate of steel exactly corresponding to the under side of the runner, while above the runner a piece of iron was placed which protected the wood when the screws at the top were tightened. The side screws pressed on a steel bar, which, in its turn, pressed the German silver into the sides of the runners. When these screws had exerted sufficient pressure, the only thing that remained to be done was to hammer the outer edges of the plates down on to the upper side of the runner, and secure them with nails.

Olsen had odometer wheels and cooking vessels to make by the time the journeys began.

The trial of the sleeping-bags turned out indubitably in favour of the new construction. We made altogether twelve single bags after the new model, and seven two-man ones, whereof four were of the new pattern. Some of the bags were made out of the 'mudds.'

What a blessing hard work is we had occasion to feel in full measure during the gloom of the polar night. The winter passed incredibly quickly. Week after week went by almost without our noticing it.

In order to begin dredging as soon as the ice slackened, I had decided to drive one of the whale-boats down the fjord and beach it under the outermost headland there. We hoped to get this bit of transport work done before the spring journeys began, but if the weather continued to be as bad as it had been all the winter, conveying the boat thither would, we feared, prove a cold business.

About February 20 the mate, Bay, and I began to prepare for this trip. We put grips for the boat on two of the 'water-sledges,' and we meant to take three teams with us, two for the boat, and one to be driven first with the baggage. We used two sledges

for the boat, because the mate was resolved to have a good sail south down the fjord. The wind had been pouring down it day after day, carrying everything before it. But when on February 25 we had rigged ourselves ready in every way, and had nothing to do but to step the mast and hoist the sail, the north wind suddenly dropped and went over to a mere slatch from the south. The distance to the headland was nothing to speak of, and the going was hard and good, so, as we did not think it worth while to drag these encumbrances with us, we without more ado threw out the mast and sail. We should not in any case have beached them with the boat, nor the ropes, as the foxes would be sure to eat them, or at any rate gnaw them to pieces in the course of the winter.

But no sooner were we abreast of Middagskollen than the wind rose again, and half an hour afterwards was blowing a gale from the north. Although we had now neither mast nor sail, we ran before it at tremendous speed. How the snow drove! We could hardly see one another; and as for land, it was simply invisible, even when we were close under it. I had, however, already had a glimpse of a large mountain out there, which we afterwards called 'Borgen,' and on this I steered as well as I could, taking for granted that we should have the wind pretty much from due astern.

We, of course, reckoned on this down-fjord wind being steady, and held the course accordingly, but after driving for about an hour we suddenly discovered that we were right up in the crack. In such drift as this it was absolutely impossible to make out where we had got to. The mate thought that we were at some point or other on the east side of the fjord, but *where* we had no idea. That we were up in the crack, that there was some pressure-ice quite near us, and that we were in a horrible fix and could hardly get the boat along at all, were, however, very patent facts, and the only ones about which we felt the least certainty.

We deemed it best in the circumstances to try a reconnaissance, and started along the crack with that end in view. But we were no wiser for our efforts. A little way up from the crack we

came to a cliff, but of cliffs there are many in King Oscar Land, and what this particular one which confronted us might be, we knew not. We soon saw that our wisest course was to camp. We moored the boat abeam the wind, tied up the dogs, and pitched the tent under the lee of the boat. Notwithstanding that it provided such good shelter, the wind beat so on the tent that I sat the whole evening expecting the canvas to be ripped up. A good many of the guy-ropes did go during the night; but the tent held.

By morning the storm had gone down, and we saw that we had come to anchor a little to the east of Indre Eidet! At eight o'clock we started again, and a little past noon reached the outer headland on the west side of Gaasefjord. There we beached the boat, turning it over and making it fast with ropes, and then encamped. In the evening we walked on a little way farther to get a view of the ice westward.

We found progress near the shore quite as difficult this year as last, and a little way from the coast the pack was in full drift. It was a relief unspeakable that we had no driving to do west on the ice in these parts this year.

Up on the ice-foot we discovered the track of a bear, but saw no animals of any sort or kind. We had hoped to find animals to shoot out here, but as their number appeared to be so very limited, and as also the following day was misty, we did not think it worth while to spend time on anything so unpromising. Moreover, we could see from the air that this calm would not be of long duration, and if the north wind set in again, the drive back inward might be bitter work.

We therefore started homewards, and with our almost empty sledges made rapid progress until we reached Borgen, but there we came in for the north wind with a vengeance. By three o'clock we were back at the 'Fram' again; but the breeze had steadily increased, and a stiff head wind, combined with a temperature of -47° Fahr. (-44° Cent.), is calculated to make one's nose smart the last few miles.

The trip had not been a long one, but we had had an opportunity of trying our new sleeping-bags, which quite came

up to our expectations. We also made trial of a new kind of sole, which we had invented and made during the winter. It consisted either of two or three layers of birch-bark covered with thin homespun, or of birch-bark alone, three or four layers according to the thickness of the bark. Our over-socks were of dog-skin.

This was the best kind of sole we had yet used with



FROM THE DECK OF THE 'FRAM.'

footgear of the sort. The soles weighed next to nothing, and were remarkably good as non-conductors. We did not see the slightest trace of rime in our boots, and although we walked all the way down the fjord our feet were perfectly dry in the evening. The trial of the new over-socks and soles being so successful, a whole set of them was made at once.

CHAPTER X.

NEW LAND!

HASSEL was now occupied weighing out provisions for the spring sledge expeditions, a bit of work which kept him busy for some little time. We had several journeys in mind, but I was still doubtful how it would be best for us to bestow our work.

From the point on the eighty-first parallel where we had been obliged to turn back the previous year, the land trended northward for as great a distance as we were able to see. We did not deem it probable that this could be very far, but how far it might be we were unable to decide. Nor had we solved the question as to whether this country was new to us, or was a continuation of King Oscar Land.

In our overland journeys from Hayes Sound we had observed that the country was indented by large fjords, and it appeared to me that the best thing we could now do, would be to ascertain whether or not these fjords were connected with Norskebugten or Greely Fjord, or whether there really existed a sound northward to Greely Fjord.

We all considered the sound theory to be the more probable one, and thought that it was a new land whose coasts we had followed the previous year. According to the results obtained by Isachsen on his journey of the previous spring, it was reasonable to presume that the inlet he had visited on his return journey was only a long fjord. He himself thought very decidedly that this was the case. The sum and substance of this reasoning therefore was, that if a sound penetrated northward, we must look for it farther east.

We knew that from the north side of the country round about Björnekap, deeply cut fjords penetrated the land towards the

south-east. It might well be thought that farther east these fjords deviated to a more northerly direction. Moreover, we were aware that a fjord penetrated the land eastwards from Store Bjørnekap, and we therefore assumed the possibility that Bjørnekap was situated on an island.

After a great deal of consideration, and many conferences as to who should lead the respective expeditions, I decided on the following plan:—Isachsen and Hassel were to go west to map the new lands which they had visited the previous spring, while I myself would explore the land north of Norskebugten. If I did not meet with a sound, my course would then be to find a passage across land to the more northern fjords.

Having been prevented from making a depot the previous autumn, however, we still had this to do before we could set off for good. It was accordingly arranged that Isachsen, the mate, Bay, and Hassel should put down a depot at Cape South-West, or possibly in North Cornwall; while I, with Baumann, Peder, and Fosheim, would make a reconnaissance up the fjord east of Bjørnekap, and leave a depot somewhere in it.

The weather at this time was not particularly inviting for a sledge-journey. Day after day there was strong wind of a velocity of 49 to 59 feet per second, and the thermometer remained steadily below -40° Fahr. (-40° Cent.). It was useless to set out as long as this never-ceasing blast was blowing; it would be only exhausting the dogs for nothing. Meanwhile we kept ourselves in full readiness to start at any moment.

About March 10, 1901, the north wind became a little less violent, and on March 12 both parties took their departure, in all eight men. It was a beautiful calm day; not a breath of wind stirred the air. The cold was intense, but that is a thing one has to put up with, seeing that one hardly goes to the polar regions for warmth.

Next morning, while we were harnessing the dogs and preparing to start, Bay in dragging his load a few yards forward was unfortunate enough to slip on a drift. In doing this he strained his knee so badly that he had to be carried on board, where he kept his berth for several weeks.

Schei, who had had various things to attend to before he could go a journey, was obliged to equip in a hurry, and take Bay's place. He was ready in a couple of hours' time.

Meanwhile I did not think it necessary to wait with my party till Schei was ready, but started up and across the neck. The loads were heavy and the snow sluggish, but happily the dogs were fresh; we drove up Gaasedalen at a smart pace, and soon passed the watershed. We had been late in starting, however, and as I did not wish to force the dogs the first day, we camped at the upper end of Storsjöen in -56° Fahr. (-49° Cent.). Not long after we had got things a little ship-shape, Isachsen and his party caught us up, and camped at the same place.

We were up and about early next morning. The other party began to cook as early as three o'clock. I imagine that with the fifty-eight degrees below zero we had experienced there were some among us who had not been troubled by the warmth that night. Here the two parties parted company, Isachsen going north-westward, and we north-east, across Storsjöen.

It was not long before we were down on the sea-ice again, and whatever the reason may have been, I know not, but we found it easier travelling there than on land. To all appearance the going was of the same kind, but my experience is that at this time of year sledges as a rule run better on the sea-ice.

We then drove northward, with a course for the fjords south of Store Björnekap, keeping well clear of land. When we encamped outside the big sandbank we had put seventeen miles behind us.

While we were tying up the dogs as quickly as we could, a big bear came up towards us. But when it came to the point, apparently it did not like its company, for it changed its direction and suddenly bore off north-east; disappearing from sight, as we would not take the trouble to drive after it.

The next day we went on at an even pace northward, and reached the mouth of the fjord we were steering on. We supposed that this fjord would extend very far into the land, and that as aforesaid it might possibly be in connection with the fjord we had seen the year before.

The wind was as strong as it had been during the night, and hardly were we well under way before we had a moderate gale dead ahead. And how the snow whirled! Every now and then we gathered courage and opened an eye sufficiently to catch a glimpse of land. The day before we had worn our wolf-skin coats, but all three of us had found them too warm, so that to-day we had on only wind-repellers outside the Icelanders, but we had not driven many hundred yards before we were glad to take to our furs again. In such cold and such wind as this, however, we found it impossible to protect our faces, and before we knew what was happening, we had white frost-bitten patches which had to be hastily rubbed warm.

We drove at a hap-hazard up the fjord that day, and were rather taken aback when at one time we found ourselves on a large stretch of sand. A little while afterwards we got into the hollow of a river, and this we followed some way northward. Notwithstanding that the wind had gone down considerably, we camped rather early. I was anxious for a reconnaissance, for it seldom answers to drive far without one.

While the others were getting supper ready, I accordingly went up to a crag on the south side of the valley. I stamped my way up across loose stones and hills of grit, turning finally into a small valley, which after much trouble led me up to a cliff where I had a good view eastward over the low neck of land.

Beyond the neck lay the sea, whence numerous fjords extended in between the great mountain-ridges with their sharp crests, and sides like steep black walls. But the distance was substantial; I put it down at forty miles or more.

The land on the north side of the neck was so flat that it was almost impossible to say where it ended and the sea began. At one time I even thought that the great white even surface I saw was a plain of sand sending its arms in between the mountains away in the north; but afterwards I came to the conclusion that it was more probably a fjord, and guessed the distance between the neck of land and the sea at some twenty miles.

What I had seen from the cliff caused great satisfaction in camp, and we set off to drive up the valley next day with much

cheerfulness of spirit. But the state of the snow beggars description! We sank into it almost to our knees, and the worst of it all was that we had stupidly omitted to bring any 'ski' with us. When we left the ship the snow was as hard as bone; we knew that out on the sea-ice it was the same, and assumed that it must be as hard everywhere on land; but in this we were much deceived. The dogs swam—for nothing else could it be



ACROSS THE NECK.

called—in it the whole livelong day, and we trudged up to our knees in sluggish, drifted snow till we perspired as if we were in a Turkish bath, in almost sixty-one degrees below zero!

It was a curious sight to look back at the caravan as it ploughed its way up along the valley. The dogs floated along in the sea of white, one team hauling and panting worse than the other; while their drivers struggled quite as much as the animals themselves. From this long column, which slowly but surely wended its way on, there arose in the still air a dense cloud of steam which lay like fog above the convoy, and so filled the hollow that, when fifty yards in front of the hindermost sledge, I

could at times see nothing of it and its team. The way was long and weary, but in the end we reached the watershed, followed the depression on the other side of it, and camped a little way east of the watershed in calm weather, but still with a temperature of about -61° Fahr. (-52° Cent.).

A little east of the watershed were five or six erratic blocks, as big as cottages. They were entirely covered with snow, and looked like enormous blocks of ice. Peder, who on such occasions was curiosity itself, was constrained to go and examine them; he could not believe they were rocks. But rocks they were nevertheless, although there was not another to be seen for miles round.

Next morning we started to drive down the valley; we were glad to see that we might soon expect an end of this pleasurable business, for we knew that the watershed was not very much above sea-level, and we felt a decided decline in the gradient of the valley. To the mutual joy of both dogs and men the snow improved in quality as we went down, and the last two miles it was irreproachable.

In several places we saw the tracks of reindeer and polar oxen; in one place also that of a bear which had gone straight overland, the same way as ourselves.

At a place where the valley narrowed to a gorge we came on to perfectly hard river-ice, which almost everywhere was smooth and shining; then with an abrupt turn of the valley the fjord opened out before us a couple of miles away. We pushed on, and were not long in reaching it. We found a decided crack, and concluded from its appearance that the tide here certainly could not be less than at Nordstrand.

For the time being all we had to do was to press on northward as hard as we could, under the cliffs, taking a line for the outermost point in sight. This we did with all the better conscience since it was easier going down there.

Our excitement was great. Was it an island we saw yonder, north of the point, and did a sound run eastward? Or should we have to suffer the disappointment of seeing the cliffs, high and abrupt, closing the waterway to us? At one moment it looked like an island; at another like a horrid bay.

By the time we reached the point we had long been alternating between hope and fear. The disappointment when we arrived there was crushing: the conformation indicated, if anything, a bay, surrounded by precipitous mountains. I drove as far forward as I thought necessary to confirm this sorrowful fact, and then stopped the sledge. But then one of the others said: 'Just let us drive another hundred yards; it might still turn out to



CAMP IN BAUMANN FJORD.

be a sound.' 'Well, I don't mind if we do,' I answered; 'but we shall never make a sound out of it, all the same!'

I threw myself on to the load, and drove on. I was not a little downcast—could not even look up. As I was sitting thus, with my eyes on the ground, I heard some one exclaim: 'Why, if it isn't a sound after all!' and glancing quickly up, beheld a beautiful large sound running in the hoped-for direction!

It was already so late in the evening that we thought it better to camp. When the dogs had been tied up, and while the others were pitching the tent, I took my rifle and went up the mountain-side

to get a view east. I had not gone far before I saw a broad waterway opening out to the east and a large fjord running between the mountains far away in the north-east.

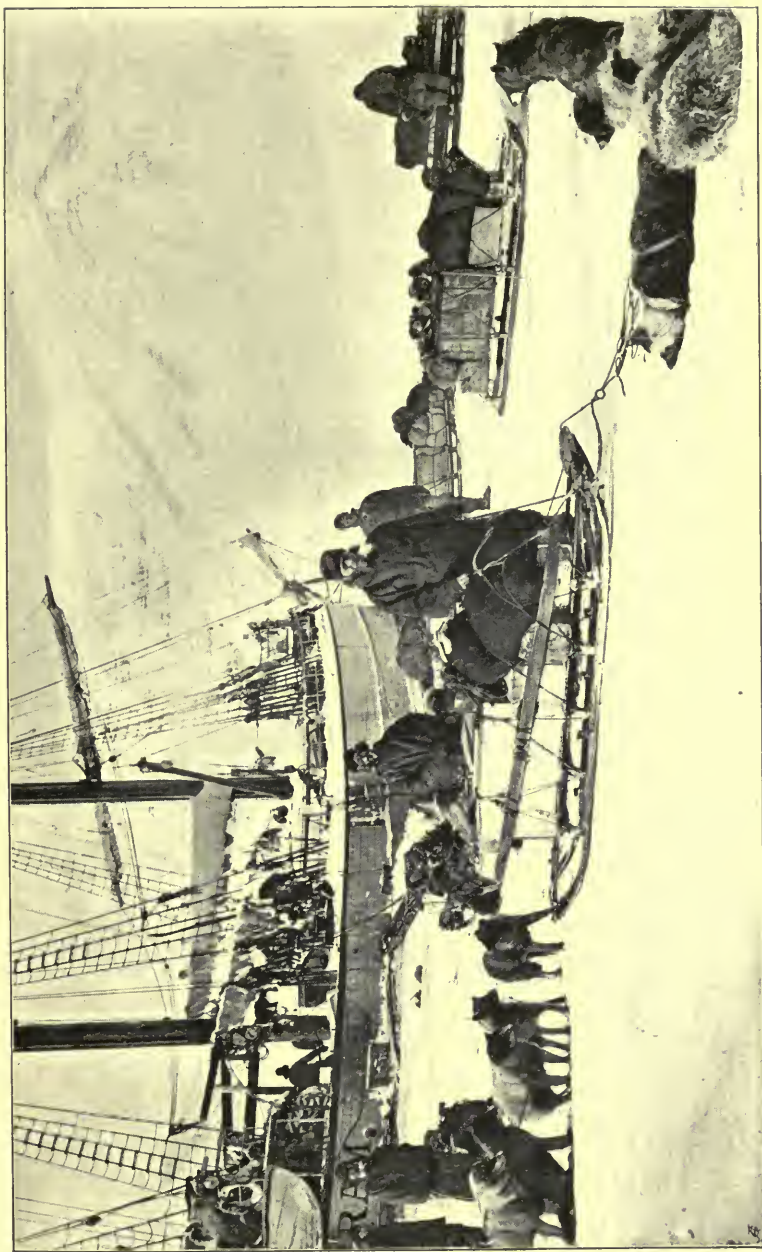
The country hereabouts seemed to be prolific in small game. There were numerous ptarmigan-tracks, and I also saw a large covey of them; they would hardly take the trouble to move out of my way. But if there was game in abundance, there were also signs of their enemies. I saw numbers of wolf-tracks, though, for that matter, we had seen them on the fjord as well. Some bear-tracks also told their own tale.

The violent perspiration which our exertions in the loose snow had thrown us into had resulted in the formation of much ice on our clothing and possessions generally. Our wolf-skin clothes were anything but dry, our bags the same; in fact, the latter were in a terrible state inside. Peder's was frozen so hard together that he could not get in farther than to his armpits, and I should think he cannot have had a particularly warm night of it.

The snow in the sound next day was very good, and we soon entered the main fjord, the direction of which on the whole was about south-west and north-east. North-west of the fjord the land rose in high jagged pinnacles, while on the other side it was bounded by low ridges. About due east of us rose a huge mountain which fell away precipitously into the fjord. It had every appearance of being situated on an island, but it was possible that we might have reason to change our opinion when at closer quarters. The distance to the more northern point we thought must be about twelve miles.

We took a line for this point, as I hoped from it to get a good enough view north to enable me to decide whether or not there was a sound running farther inwards in a northerly direction. Even now we saw fjords apparently stretching far in.

I did not wish to drive farther than was absolutely necessary, as all the dogs were beginning to be footsore, and if we allowed this affection to get the upper hand we might have to wait for weeks before they recovered. Dogs suffer very much from their feet in weather as cold and going as hard as both of these now



START FOR THE JOURNEY. SPRING, 1901.

were, as particles of ice collect at or under the root of the nail, resulting at once in large open cracks in their paws.

The land in the distance near the point also appeared to offer some chance of game, and if we found oxen there I intended to take the opportunity of making a meat depot.

A little way out on the ice was an enormous pressure-ridge stretching right across the fjord. The ice was coarse, so that evidently violent forces had been at work here. The causes of its upheaval may have been various; but judging from appearances, and also, perhaps, because the wish was father to the thought, we, at any rate, favoured the theory of a violent current acting on the ice here, and were of opinion consequently that there must be a sound somewhere or other to the north.

This supposition was strengthened by the absence of any old crack. These colossal ice-walls, which are built up on the shore, lie for a considerably longer period than the fjord-ice, and the fact that we were unable to discover any crack from the previous summer was a sure sign that the fjord had been absolutely free of ice the year before. This circumstance had direct consequences for us, as we had to use snow for cooking purposes instead of old ice from the crack, of which we usually found enough and to spare.

Later on we saw several more pressure-ridges, all running in parallel lines straight across the ice, at intervals of one to two miles.

Living creatures had been here before us, it appeared. There was certain evidence of this in all the bear-tracks along the pressed-up ice. Backwards and forwards, intersecting one another in all directions, were the tracks of many animals.

The going was so slippery that, although the dogs were footsore, we made fair progress, and latish in the afternoon reached the point. My idea was to scan for game in the bay—there was a pretty little sheltered creek there—but just as I was stopping one of my companions asked me to drive on a few sledge-lengths, so as to get a view of the bay. This I did, and no sooner had we reached the point which sheltered the creek than I saw two oxen on a precipice on the farther side. The oxen discovered us at the same moment, stood still a few minutes to gaze, and then retired slowly up the cliffs towards a gap in the hillside.

I told Fosheim and Peder to take their guns and a couple of dogs, and follow the animals. Meanwhile Baumann began to put the camp in order.

After a while they came back, having done nothing. The dogs had not got scent of the oxen, and the latter had moved so far away that it was too late to follow them farther that day.

While Fosheim and I sallied forth next morning in pursuit of game, Peder and Baumann stayed in camp to try and get rid of some of the ice on our things. The inner tent was to be hung up to dry, and the bags were to be turned inside out and laid in the sun. It was true the thermometer was at -58° Fahr. (-50° Cent.), but in clear, calm weather the sun can yet work miracles, even at such a low temperature as this. When everything had been hung out to dry they also were going a turn inland.

Fosheim and I took our way up the bay, turning eastward towards a hill whither the animals had gone the previous evening. This hill did not seem to be of great circumference—from a distance it looked like an enormous, roundish, chopping-block, and we decided to go round it.

We saw a great number of hare-tracks, and for that matter the hares themselves. They sat round in the rocks sunning themselves, and appeared to be thoroughly enjoying existence. But we had something else to do besides shooting hares, and passed one after another without disturbing their Arcadian peace.

We walked south of the hill, but when we had gone some way east of it without seeing a single track of the kind we wanted, we started up the hill itself. Its shape was a curious one. It may have been a couple of miles long, a mile broad, and 1000 feet high. It stood absolutely alone in the midst of a plain which was so level that the hill itself looked like an island. It was steep, however; so steep that only in a few places was it accessible to human beings. We climbed to the very top, hoping to get a really good view northward.

A little east of us a large fjord cut into the land, in a northerly direction. Of its breadth we could not form any clear idea, as the mountains on each side overlapped, as it were, but judging from them it must have been of great length.

It was my hope that this fjord penetrated up to the latitudes where Isachsen and Braskerud had seen the big fjords in 1899. Even if it were not in connection with them the distance thither overland must in such case be inconsiderable, and I thought it certain that we should be able to get across that way, whether or not there was connection.

The mountains on both sides of the fjord gave the impression of being very high, but east of them were lowlands extending as far north as the eye could see. The land to the west presented a wild, riven, mountain landscape, furrowed by deep black cliffs and narrow fjords, and surrounded by lofty, jagged crests, from which pinnacles and peaks rose boldly to a still greater height.

It was not long before we found the trail of oxen. The animals had descended the north side of the hill and gone on to the plain in a north-easterly direction. When we reached this again we heard the sound of dogs giving tongue, and knew that they must be on to game. We supposed that a team must have winded the animals, had broken loose, and were hunting on their own account, and we therefore followed the sounds for a time. But it was not long before we heard a shot, and although as far as the dogs were concerned one might have thought anything, we now saw the situation, and slipped back to camp, as we would not spoil sport for Baumann and Peder. Besides all the hare-tracks, we saw the footprints of a great many ptarmigan, and the trail of wolves almost wherever we went; and when we came down to the sea-ice saw bear-tracks in rows along the crack. The country in which we now were appeared to be anything but dead.

Arrived in camp again, we set to work to brush off the lumps of ice which were still clinging to the inner tent, which was now as dry as possible. We also gave the bags a brushing before we turned them, and put them in their places in the tent, in a somewhat dry condition. We then made ourselves some coffee, and as we were sitting comfortably over it and some sandwiches we heard the others drive up. On looking out we saw they had on the sledge a large, unskinned polar ox, in its prime.

So now we exchanged places; the others went into the tent and we set to work on the skinning. We all helped to dismember

the animal, cut up rations for the dogs and gave them a good supper; and, needless to say, we did not forget ourselves, but supped daintily off broth, meat, and a modicum of bacon.

The shooters then told us that they had started to walk inwards on the ice, and had seen from there two oxen on the plain. They had hurried back to camp, fetched the dogs, and driven off. The oxen soon caught sight of their pursuers, and took their stand on a sand-hill well suited for a fight; but it was not to be. At a



VIEW OF HEUREKA SOUND.

suitable distance Baumann slipped his dogs, and Peder picked off the animals.

While they were skinning one of the oxen, three wolves came running across a steep drift straight up to the animals, but on seeing the men and all the dogs they had scruples, and stopped short on a ridge of sand, three or four hundred yards away. There they sat down, and in a loud howling concert gave unequivocal expression to their displeasure at the new kind of weapon which had made its appearance in their domain. They kept up this horrible and particularly irritating noise during the whole of the

skinning process. The shooters tried to get within range of them once or twice, but, of course, it was impossible, for they only retired to another ridge, where they began to howl anew. We heard them up inland at their abominable music the whole of that evening, and all our dogs answered in the same key. It was indeed a charming lullaby!

Next morning we could see by the footprints that the wolves



BAY AS AN INVALID. SPRING, 1901.

had been sniffing round the camp in the night, not more than forty paces away from the dogs. Fosheim and I went up early to fetch the ox remaining on the field of battle, which had been skinned as soon as it was killed.

The wolves made themselves heard again to-day; their howling was audible first in one place and then in another, though the tones were considerably more cheerful than they had been in the night. They never could have been feasting on the carcase of our

ox? They seemed as if they were crowing over us, for they were always to be heard at some point or other on the hillsides.

We really cherished very faint hopes of finding our kill untouched. If all the wolves which had been about near the carcass since yesterday had eaten their fill of it there would not be much left for us, we thought. But we were not a little surprised as we neared the animal to see that all the wolf-tracks stopped short at sixty or seventy yards. Not a single 'Greylegs,' as we called them, had ventured right up to the place of slaughter. They are cautious generals, these animals, and no mistake!

We had a deal of trouble in knocking the fast-frozen carcass away from the ground, and cutting off the head; but we managed it in time. We backed it on to the sledge and drove it down to camp, where we had great work to cut it into fairly small joints. When we were nearing home we became aware that three wolves had followed our track, almost to the camp, but had then made off inland, where we heard them at their music the whole livelong night. In the course of the afternoon we cached our meat in a large snowdrift, in three different places out on the point—and hence its name of 'Depot Point.'*

The depot consisted firstly of all the meat which was left over from the two animals after we and the dogs had satisfied our hunger. This was not a small quantity, for the animals were large and fairly well covered. We cached some of the other kinds of food for which we had most use, among them being about 40 pounds of bread, and finally 450 rations of patent dog-food, and 60 rations of stock-fish, as well as a supply of paraffin. The skins we took back with us; they were particularly fine and shaggy, as the animals had not yet begun to shed their hair.

Fosheim and I went a little way up on land, each in his own direction, and between us shot a leash of hares.

Oh, how cold it was! In the middle of the day it was a little milder, but in the morning and evening the thermometer kept resolutely at -58° Fahr. (-50° Cent.), or thereabouts. Having no special reasons for saving the paraffin, as we were only out on a short trip, we kept the 'Primus' burning at its full height the

* So given by the author.

whole evening until we turned in. At such a low temperature as this a considerable amount of rime will collect even in a double tent, but as long as the 'Primus' was alight it was so warm that it was quite worth while to hang up our things to dry.

Our new footgear proved to be first-rate; the best any of us had ever had. We all used birch-bark soles inside our 'finsko,' but only a couple of us wore wolf-skin over-socks in the daytime; the rest used ordinary woollen over-socks, and found them quite warm enough. On the other hand, the Turkish bath up on the neck of land had not agreed with us very well. It had no especial ill-effects, it is true, but we were out of training, and the heavy march had told on us; whilst the violent perspiration it had thrown us into had caused much moisture to collect in the bags, and in our wolf-skin clothes, which we wore every day.

Next morning we set forth homewards. We had hardly any loads, and the ice was good, so that we could drive quickly the whole day; in the evening we encamped in a river-valley up on the neck, about two miles from the fjord-ice. We could well have driven a little farther, but we found here everything we could desire: a first-rate camping ground, good cooking-ice, and a place where we could easily fasten up the dogs. Farther up there was little or no possibility of really securing them, and no cooking-ice.

While the others were putting the camp to rights, I took my gun and walked a little way south-eastward to look at our surroundings.

The country was broken, with low undulating eminences, and it was only with great difficulty that I was able to tramp through the snow from one ridge to another.

The ridges were bare, but as a rule could show no better constituent than sand and grit, although the numerous fresh trail of polar oxen told in plain words that this great plain was not dead. Vegetation must, therefore, be sought down in the snow-covered fissures. The snow in the hollows looked like hard drifted snow, and seemed as if it would bear, but no sooner did I step on it than it gave way, and I sank in to my knees.

I soon grew tired of ploughing through all this loose snow, and

turned my face homewards. Supper was ready, and we turned in as expeditiously as possible, as we wanted to be up and off early next morning in order to get across to 'Eidsfjord,' for so we called the fjord which penetrated the land south of Store Björnekap.

We made quick progress up the valley. Our baggage was light, and we had our old tracks to keep to. When we had been driving a couple of hours my dogs winded game and set off up the hillside as hard as they could go; the snow flew up like dust behind them. I succeeded in stopping them at last, but at the same moment 'Sergeanten' slipped his trace and went on up the slopes.

Not long before my starting on this trip 'Gammelgulen' had been unlucky enough to embroil himself in a violent suitor's quarrel. Being of a very pugnacious nature, he had managed to have the whole pack on him before he had done, and they had so bitten him about the head that I could not take him with me. Altogether I had only three of my old dogs on this journey—I had been unlucky with my dogs the previous autumn—and Schei had lent me three of his: 'Sergeanten,' 'Veslegut,' and 'Rotta.'

No sooner had 'Sergeanten' set off than one of Baumann's dogs, 'Moses' byname, broke his trace and went off too. 'Sergeanten' was an incapable dog as far as his nose was concerned, and he had not the slightest idea where he should betake himself next. He shilly-shallied about for a while, and then did the most sensible thing he had done for a long time—turned back so that I could catch him again. 'Moses,' too, hung about for a time, but as he did not appear to have any intention of returning we went on. Soon afterwards we heard the dog giving tongue on the other side of the ridge.

There it stood, barking at a little heifer only a short way from our route. I told Fosheim to shoot the heifer, and a few minutes afterwards we were skinning and disjointing it. The whole thing was done in an astonishingly short space of time. Half an hour afterwards the dogs had devoured every scrap that could possibly be eaten.

The heifer was a poor deformed creature, one of whose cloven feet stood out almost like two horns; and if nature had treated it

in a step-motherly fashion, it had also suffered ill at the hands of others during its short life, for it had been badly bitten by animals of prey, probably wolves. It was weakly and small too for its age.

We drove on again and camped in the evening at the head of the fjord, down by the crack. A sharp wind was blowing right down the fjord, and we made haste to put the camp in order, and creep into the tent. At this place also we found cooking-ice at the crack.

Next morning we started at our usual hour. The wind was as strong as the day before, and moreover continued to increase; we had hardly been driving an hour before it blew so hard that we could not see land for the drift. However, we got on all right; we just took care to keep away from the wind. When we knew we had come to the outer part of the mouth of the fjord, and were clear of the big stretches of sand on the south side of it, we turned more to the east so as to come under land.

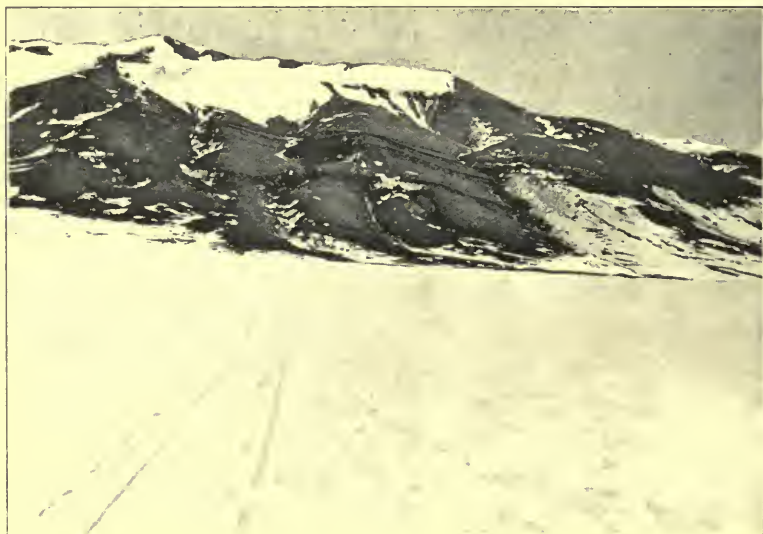
What a difference in the weather! No sooner were we under the high cliffs than the air was absolutely still, though we could see that the gale was raging as fiercely as ever out on the fjord. We soon found our old route, and kept to it southwards. It was not long before a stiff breeze from the south sprang up, and although it was rather unpleasant having it dead against us, we made such good progress that we were able to camp in the evening at our old ground outside the largest stretch of sands.

Next day too the south wind was equally strong. Whilst we were making our noonday halt on the neck of land up by Storsjöen, we saw ten or eleven polar oxen browsing peacefully up on the slopes a little way from us. We were not very anxious to shoot any that day; for one thing we had not much with us in the way of flaying-knives; and secondly—and this was the chief reason—we were on preserved ground.

I should explain that we had decided not to shoot any polar oxen on the neck during the spring and summer months, our idea being that if none were shot we might perhaps be able to capture a few alive to take home with us. We had a little hay on board, and during the course of the summer we might perhaps be able to

collect some moss and grass. We required one or two skeletons, it is true, but we thought that Isachsen and his party, who were returning by way of Graham Island, might possibly provide us with these. We therefore let the animals graze on in peace; though as a matter of fact they did not appear to take very much notice of us.

On the evening of Sunday, March 24, we arrived on board again after thirteen days' absence. It had been a cool pleasure. The temperature had risen somewhat the last few days, so that



FROM STENEKULFJORD.

the mean for the whole journey was not lower than about -49° Fahr. (-45° Cent.), but it must be remembered that we took our observations at eight in the morning, at noon, and at four in the afternoon, the nights as a rule being considerably colder.

The next day at four o'clock Isachsen and his companions came aboard. They also had had a hard trip, with much wind and severe cold. They had experienced some small casualties in the shape of frozen fingers and different places about the face, but they had suffered no serious mishap.

Isachsen had thought of making his depot in North Cornwall; he had passed Graham Island and driven thirty-five miles due west, but not seeing anything of land he had taken a line for Cape South-West, and left a depot there. During the couple of days they had spent at Cape South-West, Schei had made an excursion along the shore northwards towards 'De To Kratere.'

On the way up they had seen a herd of polar oxen on Graham Island. They had driven a little way up on land towards them, but the animals were some distance off, and the wind being from the wrong quarter, the dogs did not draw on to them. When after this the animals moved still farther off and were lost to sight, they came to the conclusion that with their heavy loads pursuit would not be worth while. They hoped to get a chance at the animals on their way back; it would be more convenient to shoot them then, too, on account of taking back the skeletons.

On the way home they accordingly drove along the crack of the island, putting down a depot on the north side of it; but the weather was so bad that they did not think it worth while to spend time in attempting pursuit of the oxen. The result of this expedition was, that Isachsen and Hassel had for their approaching journey, besides the little depot on Graham Island, another thoroughly adequate one at Cape South-West, at a distance of about 126 miles from the ship.

After this I began to think that perhaps I ought to bring myself to have a few of the animals shot up on the neck. Isachsen's party had seen them at almost the same spot that we had, and so, after some further thinking about it, I gave the mate and Fosheim orders to go up next day and shoot some of the animals.

They set off with a team of dogs, found the herd at almost the same place, shot four of them, and returned the next day with one of the animals. The others were to be fetched the day afterwards, but such a storm blew up that the trip had to be postponed till the weather improved.

Of the four animals shot three were cows in calf, and as far as

the shooters could see the rest of the herd also consisted of cows in calf. Out of ten or eleven animals there seemed to be only one bull. The fetuses were brought on board, where Bay thawed them, and put them in spirit. One of the cows we salted whole, with skin and hair, after the entrails had been removed. The other three were skeletonized.

CHAPTER XI.

SPRING JOURNEYS, 1901.

A GREAT number of small things still remained to be done in preparation for our long spring journey, and all hands were entirely taken up with them for a long while beforehand. Unfortunately at this time I fell a victim to severe toothache and neuralgia, and was laid up for several days quite unable to do anything—except to grumble, and that I could do.

It was agreed that Isachsen, having such a good depot at Cape South-West, must do without a returning party. The exploration of the land farther north, I saw, must be laid on a broad basis. We understood now that we should find a large assemblage of fjords up there, and that two expeditions would have quite as much work as they could do to explore them. Six of us would therefore drive northward, each with his team.

Schei was to be my travelling companion. It was of the utmost importance that we should have a geologist with us on a journey of this kind, especially in the tracts we were about to visit. He himself was very anxious to go, and a better companion I could not desire.

Fosheim was to lead the other northward-bound sledge-party, accompanied by the mate. Baumann and Peder were to come a little way north with us from Depot Point, and then return to the vessel, after which Baumann, with Stolz, was to go north again to map the eastern part of Norskebugten, south of Store Björnekap, and the numerous fjords which we had discovered on our last journey. After its surveyor the main fjord was named 'Baumann Fjord,' its inner part being known as 'Vendomfjord,' or 'Turn-back Fjord'—why, we shall see later.

Stolz, who had long been practising photography on his own account, was now constituted photographer to the expedition, his first duty being the portraiture of all the dogs, and some of the nearer surroundings of the ship. He was duly provided with the plates necessary for the spring season.

Before starting all the dogs which were to go with us were weighed by Isachsen and Hassel. The heaviest weighed a good 92 lbs.; the lightest 57 lbs. Full-grown he-dogs generally average about 77 to 79 lbs. They were not as plump now as on our first trip, which, short as it had been, had taken it out of them considerably. The weather on that occasion had been particularly rough, and food at such times seems to have little effect on them. We simply crammed them during the interval on board, and were able to notice an improvement in them every day.

Easter occurred during this interval, but we had no time in which to take particular notice of it, and on both Maundy Thursday and Good Friday our work went the even tenor of its way; the only outward difference being in the extra food. It had been my intention to break up before Easter, but I was not well myself, and as an incredible number of small things cropped up which had to be attended to, we had every reason for postponement until after Easter.

All the instruments for use on the journey were regulated as accurately as it was in our power to do so. This year there were four different expeditions to be provided for, so I had to be content with only a pocket sextant with a glass horizon. Isachsen and Fosheim had each their travelling theodolite, while Baumann took the ship's sextant with a quicksilver horizon.

On Easter Monday, April 8, we were at last ready to set out, and about ten o'clock we left the 'Fram.' The weather was cold, but still and brilliantly clear, and the snow was good going, if not exactly as fast as we had sometimes had it across the neck. We were able to drive in peace the whole way without getting mixed up with a single stone. South-west of Storsjöen, not far from Aamot*—so we called the place where the river

* The name of many Norwegian peasant properties, and consequently also often a family name. It means the meeting of two streams or rivers.

from Storsjöen joined the river from the valley in the south—we said farewell to Isachsen and Hassel, who then went across to Nordstrand. We took our old way north, along Storsjöen, and came down on to the sea-ice north of Nordstrand, pitching our tents in the evening by the ice-foot.

Very soon after supper we heard the dogs giving tongue, and knew that there must be a bear about. As we were an encampment of three different tents, of which Baumann and Peder's was the last, and it was from this direction we heard the bear, they, of course, were entitled to the first shot. We therefore contented ourselves by peering out at our tent-door, and saw them crawling forth from theirs. Not long afterwards we heard a shot, and all hands, except myself, turned out and skinned the bear, fed the dogs to repletion, and cached the skin in a snowdrift, where it was to remain until Baumann and Peder drove south again.

The following day we pushed on north-eastward along shore; and on the evening of the third day after our departure camped under the precipitous cliff on the south-west side of Eidsfjord. We stopped rather early in the day, as there were several things we wanted to do, one of them being the attaching of the wooden over-runners to the sledges, which had begun to travel badly. We also had to deposit seventy-two rations of dog-food in the inner part of Eidsfjord, and this among other things necessitated some soldering.

We could see the whirling of the snow-clouds in the inner part of Eidsfjord, and it made us feel all the more comfortable under the lee of our high mountain. While we were soldering the boxes a bear came jogging straight up towards us. Its late arrival was decidedly annoying, for had it come sooner we could have saved a meal of dog-food. However, as things turned out, it was our annoyance which might have been saved, and not the meal, for just as we were remarking on it 'Bamsen' got wind of us, and set off as fast as he could go, kicking up the snow in a cloud behind him.

When we turned out at four o'clock next morning it was blowing hard straight down the fjord. With such a wind out

here it was not difficult to imagine what it would be like inside, and we therefore decided to stay where we were for the present. At nine o'clock the wind went down, and we hastened to get under way.

We had not been going long before we saw the snow driving inwards again from Store Björnekap, but happily we had gone so far by that time that we had the wind almost due astern. Not many minutes afterwards a raging storm fell on us from the west. However, things went pretty well up the fjord, inasmuch as we made good progress, but the worst of it was we did not quite know where we were going. Our old camping-ground, where it was our intention to leave the dog-food, was the only place that was at all marked, and that consequently we could hope to find again. But how we were to find our way to it in such weather we knew not! To our unspeakable astonishment we somehow or other drove straight to the spot, and there got rid of our tin box. Good luck is sometimes better than good management.

But to make our way across the neck of land in such execrable weather was easier said than done. However, we made up our minds to go at it as long as it was possible, but after driving for a couple of hours we were stopped by a deep side valley, which completely closed our way. Where we were we had not an idea. All reconnaissance was in vain. Manifestly the best thing for us to do was to camp, and camp we did.

It was a cold job pitching the tents, but what troubled us most was that there was nothing to which we could secure the dogs. After a deal of trouble we found a drift which was deep enough for us to thrust our 'ski' into, and in that manner tie up the dogs.

I had on only ordinary woollen mittens that day, my wolf-skin gloves being carefully packed away in my private bag. The keen wind blew straight through the loose wool, and the snow drifted in, making it impossible for me to keep my hands warm. Camping in weather such as this is anything but a speedy performance, and all the brushing necessary to keep the snow out is not the least part of the trouble. Before the tent was up several of my fingers were entirely frozen, and, what was worse, the back of the hand had also been touched.

Beautiful weather, still and clear, was the order of the following day. Even the snow had undergone a remarkable change—before loose and heavy, but now so hard and good that we made Baumann Fjord by nightfall, and camped a little way up it, reaching Depot Point the day afterwards, where we found everything in good order. We dug up the frozen meat, and let the dogs eat their fill for supper.

Next morning a keen wind was blowing, despite which it was misty until the afternoon. We dug assiduously to get out the rest of the depot, provisioned ourselves for the journey north, and made everything ready for our departure on the morrow. None of us found this delving work very agreeable, to say nothing of taking observations and the like with the temperature at -56° Fahr. (-49° Cent.).

I went up on to the western part of the mountains, shot a brace of hares, and had a splendid view to the north, over fjords, mountains, and plains. I received the impression that a passage must be practicable from the inner part of Baumann Fjord to the waterway we had seen in the spring of 1899.

It was decided that Baumann and Peder should come northward with us for a couple of days longer, and then return home to begin on the mapping later on.

The dogs pulled hard when we started next morning, and we drove up the fjord with the snow swirling up round us. We hopped and pounded from drift to drift, and it was as much as we could do to hold the heavy sledges on an even keel. It was not until the afternoon, when we were well up the inmost fjord-arm, that the going became slow again.

About midday we reached the entrance to the innermost fjord, which, long and slender, penetrated the land in a northerly direction. On the east side the country was very flat, with low rounded ridges, and towards the north-east the lowlands stretched so far inwards that I found it barely possible to distinguish the mountains in the distance. But farther north they increased in height, and in the inner parts of the fjord lofty mountains fell sheer into the sea.

On the west side too the mountain-walls were of considerable

height, with sharp pinnacles and peaks; but all the way up the fjord the sea and the mountains seemed to be divided by a pretty lowland intersected by many ravines and river-valleys. Although winter still lay on sea and shore, it had not succeeded in obliterating the traces of the vigorous vegetation in here. Leaves and grass were strewn in all directions, and the whole of the drive up the fjord we saw parts of plants which had been blown on to the ice by the wind. This was on our beam, and such numbers of leaves



ON GUARD AT THE REFUSE-HEAP.

collected in the sledge-tracks that they looked like black stripes behind us.

As we were jolting steadily along up the fjord, about three o'clock, my dogs suddenly winded game. They grew keener and keener, and soon pulled so hard that the team behind could not keep up with them. So we went on, mile after mile, the dogs hauling with all their might. There did not appear to be a living thing outside our caravan, but I knew my team by this time, and felt sure they were not on a false scent.

At last I stopped at a point of land where I thought we might settle down for the night, but my team were of quite another opinion; they pulled and strained so to go on that I could hardly check them. I gave way to them, and off they set again. Just as we were turning round the point I caught sight of two animals up on land, on the other side of a bay. We crossed the bay at a smart trot, and when we neared the shore the dogs insisted on going up on land. They tore across the crack before I



FOSHEIM AND THE MATE'S TENT IN CAÑON FJORD.

knew what they were about, and could not be stopped until they had gone a good way up the hillside. I then let go the traces, and away they all went like the wind.

I waited for my companions, told them to camp while I went after the dogs, and then took my rifle and went off. Quite right: as soon as I reached the top of the ridge I saw the dogs a little way off on the plain. They had plenty to do there it appeared, for they were holding two squares, three dogs to each!

I walked towards the nearest herd, and saw that it consisted chiefly of cows; as far as I could see there was only one bull

among them, but that one was a fighter of the right sort. He had taken up his position outside the square, and kept things going by making small sallies after one of the dogs, while the other two were keeping the square. The other square had no defender in the outpost's line.

The first animal I sighted for was of course the bull, which I wished to kill as soon as possible. I had just shot two of the cows in the same square when Schei came up after me.

As soon as I had begun to shoot, the dogs from the other square had come running across to mine, making all together a great racket. I could not bring myself to shoot the whole of this big herd of thirty animals, and with the exception of a couple of sallies at first, none of them had attempted to make an attack. Inside the square were mostly young animals, while the cows which stood in the line of defence were almost all in calf, and not much disposed to fight. We could not get hold of the fallen animals, for they were lying inside the line; nor could we catch the dogs. They were yelping and giving tongue with all their might close in to the square, but without doing it much damage.

We stood thus, glaring at one another for a time, but in the end this was neither entertaining nor lucrative. We had better try to get hold of our dogs, and see if the square would not then disperse. At that time we had not seen much of what polar cattle may choose to do to an attacker, but we felt pretty sure that it would be risky to go close up to them.

Something, however, had to be done, so we cautiously crawled towards the animals. There stood the whole herd, forehead to forehead and horns to horns, gazing at us with great, dark, wondering eyes. Not one stirred to attack, but they were ready for defence, for as we gradually approached them the more distant animals closed in and made front against us, without however uncovering any point of the square. At some few yards from it we succeeded in getting hold of the dogs, and then tied them up at a distance.

But the herd stood motionless as before. They had no confidence in our friendly advances. We then walked a little distance away, but kept careful watch on their movements. At

last they began slowly to retire, though only a few steps at a time. It was a pretty manœuvre, and quite what one might call a 'covered retreat.' They did not for an instant break the square, nor for an instant expose their calves and young animals; and in such a square they are safe enough: no beast of prey can break into it. Thus they retired—a curious spectacle of armed peace—towards the other square, which had begun to retire as soon as the dogs had left them. How many animals the other herd numbered I am not certain, but probably also about thirty.

The men from each tent now fetched their animal to camp, where it was skinned and portioned out, and where the dogs ate as much as they were good for. Schei and I cut out a number of marrow-bones, and the broth in our tent was strong that evening. We all looked forward to an extra warm night with the skins under us.

Meanwhile, Baumann and Peder anticipated *their* warmth; they had a new burner to their 'Primus,' and whether it did not quite suit the apparatus, or whatever it may have been I know not, suffice it to say that while they were sitting listening to the cheerful singing of the machine and looking forward to the delicious steaming broth, the burner suddenly flew off, and in a moment the tent was transformed into a small sea of fire. They started up and out, with their wolf-skin clothing somewhat scorched, and tore a rent in the canvas in so doing. The fire was soon extinguished, without having done any harm worth mentioning, a new burner put on, and the cooking resumed.

Fosheim's comfort fared ill that night. Late in the evening he discovered that he had lost a bag of bread, and in the innocent hope that it had happened quite recently, sallied forth to find his lost treasure. But his quest took longer than he expected, and led him, though without finding the bag, all the way back to the place where we had made our noonday halt. He had then gone a distance of eleven miles or so, and thought it was time to return. He went quite a walk that night, while the rest of us were slumbering peacefully—more than twenty miles altogether—and did not get back till shortly before we were ready to break

camp. He and the mate between them kept the whole affair dark. Had I known anything of it I should never have consented to his going off alone at night without a gun, in a country where there were bears about.

The tent being in need of repairs, we did not start till about half-past nine the following morning. Later in the forenoon we passed a herd of polar cattle, which stood and gazed at us from a point of land. As far as I could see the herd consisted of twenty-three animals, and it was probably one of those we had done battle with the previous day. The dogs also saw them, and were determined to pay them a visit, but we had no time for that, as we had to try and make a reasonably good day's march again to-day.

As we travelled inwards the fjord became narrower and narrower, and the mountains higher and higher. This was serious; and our hopes that the fjord and the lake we had seen farther north were connected, sank lower the farther we went.

We took observations for meridian and longitude, and according to them our position that evening was lat. $77^{\circ} 46'$ N., long. $83^{\circ} 15'$ W.

Next morning Baumann and Peder handed over our provisions and turned southwards, whilst we continued up the fjord. The weather was still cold, but clear and calm; notwithstanding this the snow became looser and looser, and by noonday was so distressingly loose and slow that the dogs floundered about in it up to their flanks, and were scarcely able to move the sledges. This was sad work! Moreover, it was no use wearing out the dogs when we did not know whether in the end we should be able to go farther, so we turned off towards a big valley with a river in it, camped outside it, and decided to reconnoitre.

I determined to send Fosheim across the fjord to a hill which promised a good view of the fjord and its prolongation, while I myself climbed a hill north of the valley, from which I thought I might also get a good view of the country.

Whilst we were camping we saw a polar herd which were grazing some way up the slopes, on the north side, about in the

direction I meant to go; but they moved off north-westward, and were soon hidden behind the ridges.

It was hard work making one's way to the top of the steep hillside in such terribly loose snow. My 'ski' sank right through it and down to the sharp stones beneath, and as for their gliding, it was out of the question. In one of the prettiest parts of the south side of the valley a herd of polar oxen were peacefully grazing; it was the second herd we had seen that day.

In the end I succeeded in stamping my way up to the top, but there my cup was filled to overflowing, for a thick fog came on! Grey and clammy it came pouring round me, rendering it impossible to see anything, though I was just able to make out that I was standing on a large plateau. I went northward a while in hopes that the mist would lift, which it did to a certain extent, but not sufficiently for me to form any idea of the lie of the land. From the higher points on the plateau I could see a top here and there, protruding above the sea of mist, but what there was down in the valley below I knew no better than before, and I eventually wended my way back to camp as wise as when I set out.

Fosheim returned very soon afterwards, having been no luckier than myself. He had seen a herd of grazing oxen, eleven in number, and countless tracks wherever he turned. In many places the ground was trodden up just like the cattle-fold of a 'sæter' at home.

There was nothing for it but to repeat our reconnaissances the following day in clearer weather: Fosheim up the fjord; I up the valley we were lying near. This valley ran almost west, but two or three miles farther up it trended due north. I continued in a westerly direction, and climbed a fairly high top, from which I expected a good view northward. I cannot say that I had no view, for in point of fact I saw a long way to the north, in the direction of the trend of the valley, but I was not higher than the watershed, and was therefore unable to solve the all-important question. To follow the valley northward in order to find this out would take too long; I therefore chose the alternative of climbing a more westerly top.

After incredible toil I eventually reached the summit, and from there saw conclusively how impossible it would be to follow the valley northward. The way was cut off by a network of impassable intersecting cañons, which cleft the land like broad deep grooves. But on the other hand I received the impression that I could find a fjord westward. On I went west, therefore, and had soon passed the watershed, thinking to my joy that now I was on the right track, and was not a little discomfited when it proved that the slope only led down into a huge cañon, extending in a northerly direction. I followed this cañon. It described a large curve round the hill I had first climbed, and issued out into the main valley!

This round gave me a good idea of the utter impracticability of the country, cut up as it was in all directions by ravines. Had Fosheim found no better passage than myself there would be no other way open to us but the way back. On my way up I had seen no fewer than five polar herds. In four of them I counted eleven animals; a noteworthy figure which seems to play an enigmatical part in the herding of these animals. We had seen two of the herds the previous day, in almost the same place. The animals on the south side were lying, or moving about, near the edge of the steep banks of the river. Thinking it would be interesting to see them at rather closer quarters, I went out on to the bank on the north side, exactly opposite to them, so that only the river separated us. No sooner did they set eyes on me than they formed into line of battle, and remained glaring fixedly at me.

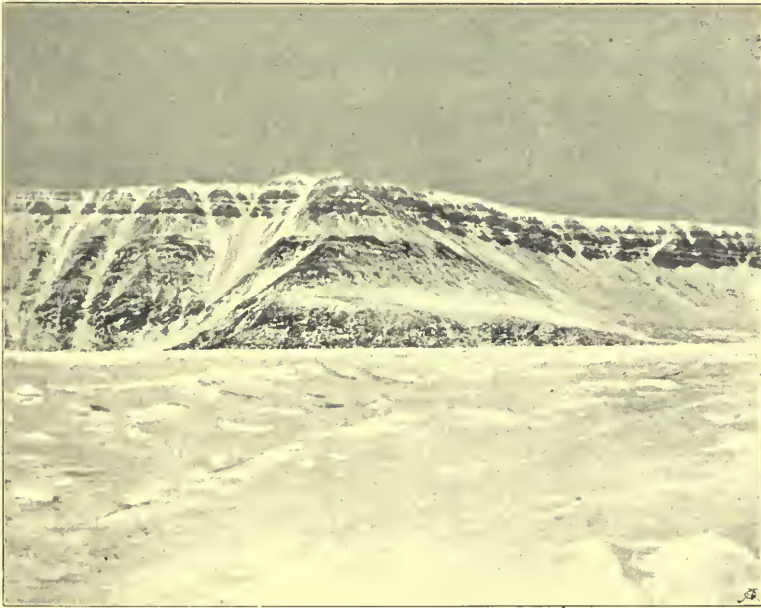
A mile or so farther up, where I had to cross the river, I again passed a herd, on the south side, which, notwithstanding that I approached no nearer to them than a couple of hundred yards, found it necessary to form up on a little sand-hill, where they stood sharpening their horns in readiness to give the enemy a warm reception.

Altogether I saw more than fifty animals that day, the greater number of them being cows in calf, with young animals among them. On the east side of the fjord Fosheim also saw a herd of eleven. Then too there were countless tracks of hares and

ptarmigan, so it is little wonder that I almost felt as if I was in a cattle enclosure at home. Nothing was wanting but the bells.

And such vegetation—on both sides of the fjord the most luxuriant we had yet seen! I hoped to be able to get a glimpse of it all later on, when the fjord was in its summer beauty.

Good as was this country for big game, it seemed to be no less so as far as ground game was concerned. I saw numbers of hares on the slopes, many of which I could have bagged, but the home-



MOUNTAINS FROM HEUREKA SOUND.

ward way was long, and no more fresh meat was wanted just at present.

In camp that evening I learned that Fosheim also thought we ought not to attempt pushing on up the fjord, but should do better to drive out again and try another passage farther west. In this loose snow, moreover, where the heavily loaded sledges sank through to the stones beneath, our wooden over-runners would be worn out in a couple of days. The distance from our camping-place to the head of the fjord Fosheim thought to be twelve or thirteen miles.

The shore narrowed as the fjord went on, and in some places for long distances together did not exist at all, so that the perpendicular cliffs fell sheer into the sea.

Of the small game, in which the country seemed so prolific, he had shot some ptarmigan and a leash of hares, which were as fat as little pigs. I don't think I ever saw such fat hares. Thanks to Fosheim's generosity, both tents had roast hare for supper.

We held a great council that evening. All were agreed that an attempt to go overland from here would end in absolute failure. The dogs would be worn out, the material spoilt, and we should get no way. The wisest thing to do was to turn back, and try our luck farther west.

The following morning, therefore, we retraced our steps down Vendomfjord. We drove quickly and easily, and were able to pitch the tent at night at our first camping-ground, near the place where we had shot the big game.

It does not often happen that effeminacy can stimulate one's ardour and energy, but in this case it certainly did so: we thought of the beautiful warm skins lying out there, and greatly rejoiced at the prospect of resting on them. But alas! To our dismay, instead of the soft long-haired skins, we found nothing but a few wretched little scraps, left by our companions, who had taken all the rest with them! It is always from one's own that the stab comes. However, they were quite right in what they had done; they were driving that way in any case, and had no loads of their own.

Next morning we continued down the fjord, keeping close inshore along the west side, where the snow was harder than it had been on the way up. The bears too appeared to like going there, for we saw their tracks, old and new, crossing and recrossing one another all the way we went. By noon we arrived at the point where the land began to trend westward. We made a short halt outside the crack, of which Schei, however, did not take advantage, for he could not resist going ashore to look at the rocks at closer quarters. We had now, I should explain, started taking a short rest in the middle of the day, generally with a biscuit and butter or pemmican.



AT BLAAMANDEN.

The weather was kind to us on the way out, continuing still and clear the whole time, and when that is the case one does not take much account of the cold. Things go swimmingly then, both for men and dogs, and one's daily marches have some sense in them, no matter how slow the snow is, I had almost said. Even with our heavy loads we covered eighteen to twenty-two miles in the day, twenty being our usual figure; and this is good work at the beginning of a season, when the loads are at their heaviest. Then, too, no matter what the going was like, we went on 'ski' beside the sledges, and this made progress much quicker. On the bright ice, of which we came across a good deal, we slipped and slid about, but all the same we generally stuck to our 'ski.'

We took a line for the most western point we could see, and camped in the evening not far from a small rock east of it.

On Sunday morning, April 21, just as we were beginning to get ready to start, we saw a bear in the distance making straight for the camp. The dogs saw it too, and raised a doomsday alarm, but the bear was of the right sort, cared not a jot for their noise, and came straight towards us at a jog-trot. I very quickly had out my gun, and stood ready for it. At suitable range I fired, and it sank to its knees, but rose again at once and set off at a trot as before. I then gave it another shot, and this was too much for it; it made a dash round and died almost immediately.

It was a fine specimen of a bear, an animal in its prime and extremely fat. That it had enormous strength and was well aware of it was very evident, for it came up to us with unheard-of boldness. On the whole, I think it was the largest bear we shot on the entire expedition, and had the finest skin we saw up there. And such beautiful large white teeth—it would have been a joy to a dentist.

The skinning was at once begun on, and the dogs crammed. We took with us enough meat for the requirements of the evening; the rest we were obliged to leave. But not to take the beautiful skin with us was hard indeed, still there was nothing to be done; we could not drag it with us all the rest of the spring. We used often afterwards to talk of the 'Sunday bear,' and its size and beauty became almost legendary.

This episode kept us until eight in the evening, but as it was now light both night and day, this was no great matter. We continued our course westward from point to point, and each time we came to a new one we expected to see a fjord or large sound penetrating northward. But each time also our hopes were shattered, and we saw only smallish bays walled in by high cliffs, though not so very high either just here, but more so farther west. The formation of the mountains was wild and broken, with jagged ridges from which defiant awl-pointed peaks and pinnacles tossed their heads in the air. But betwixt these tops and peaks rows of valleys or deep clefts cut in, behind which we were unable to descry any mountains. The landscape was thus cut up into a series of isolated aggregations of mountains, which, out towards the coast, formed as it were a narrow border round the plains inland.

As long as we were inside the sound between 'Hovedöen' (Main Island) and the mainland the going was tolerable, but it grew heavier and heavier as we went north, and later in the evening we drove for long distances through loose, deceptive, drifted snow, in which the dogs floundered hopelessly. One minute it would bear, and the next let them through into the disgusting, bottomless mass. However, the sledges travelled pretty well, and we had crept quite an incredible distance when, finally, that evening, we pitched our tents up on the ice-foot. Some floes of ice standing on their sides looked so much like old ice that we went to chip some of it off for cooking, but we were deceived; it had all been formed in the autumn.

The following day we started afresh in the same distressing condition of things. At midday we stopped and took an altitude. All the way up the fjord there were tracks of bears, crossing and recrossing one another in all directions, and while we were resting, a bear came stealing up towards us. At first it was fairly bold, but at four hundred yards turned tail, and set off as hard as it could go eastward.

A little later in the afternoon another bear came running out towards us from the ice-foot. He looked ready to burst with curiosity to know what we were, but that he can hardly have

found out. He peered and stared, and turned and twisted till I felt quite sorry for him, and felt as if I ought to offer him my glasses, for his eyes seemed to be almost dropping out of his head. When he could do no more he set off south-eastward, but struck out so far from land that he fell on to our tracks, where he picked up the scent and followed us for an hour or more, though always at a respectful distance.

We had been steering for a time on a high headland whence we expected to find a fjord or sound trending to the north; at any rate, a big bay appeared to run northward. Our course being set on the end of this cape, we came to strike out some distance from land, and camped that evening about three miles out on the ice.

It was almost impossible in all this loose snow to properly secure the dogs, and we could think of no better plan than to thrust our 'ski' and 'ski'-staves well into the snow and tie up the teams to them. I was not at all at ease about the dogs that evening. If once they wind a bear there is no knowing what they will do next, and what we had to secure them to that evening would be useless if once they made up their minds to get loose. But if we kept on the alert we should, I concluded, be able to stop them before they had got away.

Early in the morning, just after we had finished breakfast, the dogs gave tongue. Schei plunged out of the tent, and I followed at his heels, but we had hardly set foot outside before they wrested themselves loose and set off after a bear. Their traces had already become inextricably entangled during the course of the night, and when they now set off, with the connecting lanyard holding all the traces together, confusion became worse confounded. Away across loose snow and every obstacle, as hard as they could go, but always with a couple of yelping, sprawling duffers in tow, who made the snow fly up like dust. As for the bear, they had hold of it several times, but could not bring it to bay. I was only thankful the fellow did not take it into its head to make an end of them on the spot, for it could easily have done so had it liked. And thus the whole medley made their way towards land!

Meanwhile, I helped Schei to throw off the load from his sledge, his team was put to, and he drove off as quickly as he could, with the mate on 'ski' a good way ahead of him. The bear was brought to bay at the crack, but before the mate came within shot, it had managed to slip off up the talus, where it took refuge below a crag. By this time, however, the dogs were so tired out that they gave up the chase, and the mate with great trouble disentangled them. It appeared as if the bear was as tired as the dogs, for it sat panting among the stones for a long time.

It was not till three hours afterwards that the men and dogs turned up again. Meanwhile, Fosheim and I had struck camp; had hung the inner tent up to dry, freed both tents from ice, and had dried them. While we were doing this, and waiting for our companions, we kept an eye on a bear which hung about for a long time a little east of us. It appeared to have a burning desire to make our acquaintance, and several times started towards us, but always thought better of it. Finally it fell on to our driving way, and followed the track back, as bears generally do, disappearing to the south-west. As, according to the mate, it was easier travelling under land, we set our course straight on the shore.

At the headland we had been making for a long fjord opened out to view, in a northerly direction. At last, then, we had probably found the waterway we had been seeking so long!

CHAPTER XII.

TROLDFJORD.

WE camped a little way round the headland, as I did not wish to drive farther before I had been up on to high ground. The dogs, too, were so tired after their bear-hunt that they were good for nothing, and although the distance we had driven was not six miles, I thought it wiser on their account to make a halt.

When the camp was in order and the dogs fed, Fosheim and Raanes took an azimuth, while I went up the talus with Schei: he in the capacity of geologist; I to scan the country. But it was so steep and the snow so loose, that I soon had to stop. This much I saw, however, that the fjord penetrated a long way to the north, and, at any rate at first, was of quite a fair width.

It was my opinion that we ought to drive up this fjord; it could not be far now to the fjord Isachsen had visited the previous spring, and if any pass existed from in here to the fjords we saw in the spring of 1899, we were probably on the right track.

The bears seemed to have a high-road round the headland, so numerous were their tracks. At about four in the morning the dogs turned us out, and when Schei and the mate from the other tent ran out, they saw a bear going full speed some three or four hundred yards from the camp. We let it go; and they turned in again.

We set forth at our usual hour. The snow became harder and harder, and a mile or two up the fjord we began to make rapid progress. But by degrees as we drove farther in our hopes sank of finding a sound. The bear-tracks decreased very

noticeably, and this was a bad sign, but we had made up our minds to see the head of the fjord, and see it we meant to.

With nearly fourteen miles behind us we stopped a little before midday to take observations, and then went on again. About two o'clock, as we were driving fast up the fjord, a bear came bearing down upon us. I meant to have him. We were going down wind, so that the dogs did not get scent of it at first, but when I suddenly swerved from the course they knew at once that something was going on, and increased their pace still more. They soon caught sight of the bear, and then they



OUR LAST CAMP TOGETHER AT BLAAMANDEN. 1901.

set off at such a rate that the snow whined under the runners and the sledge hopped from drift to drift, while I hurried by the side on 'ski.'

At fifty yards' distance I was just about to let go the traces when one of my 'ski' got under the sledge, and down I went. I still had hold of the connecting lanyard, but it was fastened so tightly to the traces that I could not loosen it. Now it was my turn to be dragged! I can't imagine where the dogs get their strength from when they are on to game: the heaviest load is as nothing to them then. Their pace was as fast as ever, though both my 'ski' lay crosswise under the sledge.

I by no means enjoyed my ride; I lay trying to back the dogs so as to unfasten the connecting lanyard, and took one bump after another, the one more accentuated than the last. As for my legs, they sometimes felt as if they would be rubbed right off. Several times I was on the point of letting the whole thing go, but thought better of it, as I was afraid the bear might make an end of the dogs, whose movements would be hampered by the heavy load behind them. Then, too, my team was so far ahead that it would be quite a time before the others could come to their rescue, so I thought my legs must take their chance; they would probably hold this time too. Ultimately I managed to unfasten the lanyard, and was not a little relieved when I saw the dogs tear off without me.

Schei was number two in the caravan; he dashed past me, and when he was within range let go his dogs, so that the bear had plenty to do in waltzing round after them until he saw his opportunity, and sent it a fatal bullet. We drove all the teams to the field of battle, pitched the tents beside the fallen animal, and fed the dogs.

It was a poor little bear, and the four teams ate it up, skin and all. Nothing remained of it when their hunger had been somewhat appeased but a good number of tufts of hair, and here and there some well-gnawed bones and bits of skin with the hair on them. During the night they even ate up the remains of the skin, and when we came out in the morning, all that was left to remind us of the bear were the bones and a few tufts of yellowish hair fluttering in the wind.

The bear-hunt had delayed us a good deal, so that the distance we drove that day was only seventeen miles, but this was permissible since we had procured a gratis meal for the dogs.

Latish the following afternoon the sky began to cloud over, and I was afraid we were in for some bad weather. We had had splendid weather ever since we left the 'Fram,' and could not expect it to go on for ever. About four miles from the head of the fjord we stopped, and pitched the tents for the night.

Here, then, was an end to this fjord also, and our hope that it would lead us to the promised land in the north sank many

degrees. It was a horrible hole that we had got into; the fjord became narrower and narrower the farther we went, with high threatening walls of rock on both sides. At its actual head it was as narrow as a gut. The mate dubbed it 'Trolldfjord' (Troll Fjord), a name we thought so suitable that it has not been changed.

Still, I had not given up all hope. I pinned my faith now on some valley from the head of the fjord which might lead in the desired direction. Yet even in regard to this matters did



BY HEUREKA SOUND, SOUTH OF ISFJELDODDEN.

not look very promising, for to all intents and purposes the fjord ended in a steep cliff.

We began to drive in misty weather the following morning, but when a breeze from the north swept it away we saw that between a high steep mountain on the east side of the fjord and the cliff which barred its head there was a narrow opening. Either it must be a narrow sound forming a prolongation of the fjord, or a valley which perhaps might open the way northward for us.

We were in a good deal of excitement as we drove up the fjord, and Fosheim, grown wise by experience and with a desire

to forestall any appellation that might possibly be wanting in taste, at once proposed that the sound should be called 'Rigets Port,' or 'The Gates of the Kingdom.'

Unhappily Rigets Port proved to be no portal, after all; the fjord stopped mercilessly. But east of us, penetrating the land, was a fairly wide valley, flat at the bottom and of inconsiderable gradient—to begin with, that is to say, for after a couple of miles this blissful state of affairs came to an end, and mountain walls, high and black, again barred the way.

We camped under the mountain-side, so as to be sheltered from the wind, boiled the kettle and made ourselves some tea, and then Fosheim and I went off to reconnoitre. Schei and the mate were to remain in the neighbourhood of the camp until after the midday observations had been taken. After that Schei was going a geological excursion, and Raanes to try to get some hares for supper.

CHAPTER XIII.

A POLAR IDYL.

FOSHEIM and I set off eastwards up the valley. We took our 'ski' off when we reached the steep large-stoned screes, and worked our way laboriously up the mountain-side.

It was a weary climb! As always on such occasions, we continually thought we saw the top, and when we reached that particular spot, found we had to mount still higher. But at last we reached the summit, and were able to see a good way to the north. Far away in the north-east rose some high mountains behind a wide flat expanse, which we took to be fjord. It might, of course, be a stretch of sand, but we wanted a fjord there, and so we decided to think it one. A few miles away from us stretched a plain, which we thought must be the watershed, but that was a matter which we had to investigate further, as well as the best way of reaching the plateau we saw in front of us.

So now we had to trudge northwards. After we had gone a little way we saw a herd of polar oxen on the east side of the valley, and we agreed that Fosheim should kill a couple of them, whilst I went on northward, to the prospective watershed.

The walking was heavy work, but I pressed on, and at last had the satisfaction of standing on the watershed. It was a comfort to know it was not farther off, for from that I concluded the distance on the other side would not be so very great. On the other hand, the country north of the watershed did not look at all promising; black walls of rock closed it in, and I was sorely afraid that a cañon led down between all the horrors I saw away in the north-east. I then turned back; and with the intention of helping Fosheim with the skinning, made my

way to the spot where I had last seen the herd, but when I reached it Fosheim was just starting back with a supply of meat and liver.

We then went down to look at the valley. At places it was, no doubt, very narrow and winding, and the stones stuck up through the snow; but to our great joy we could see with almost absolute certainty that the incline was nowhere so great but we could easily drive up it with a single team to each sledge.

But what a country for hares! Track upon track wherever we looked, and hares hopping from stone to stone wherever we turned. I had never yet seen anything to equal it. But we had meat enough for the time being, and so left the hares in peace and went back to camp.

There the mate was in a position to present us with a leash of hares, and Schei's observations had been satisfactorily accomplished, so that in spite of everything I had reason to be well satisfied with the day.

The following morning we started up the valley. Things went pretty well, although the gradient here and there was so steep that we had to give the dogs some help in the hauling. By about one o'clock we were able to camp on the plain. I then went northward to look at the country, while the three others took the dogs to the slaughter-ground to fetch the two carcasses.

The snow was in splendid condition for 'ski,' and, after I had gone north of the watershed, the pace became as hot as one could wish. The plain narrowed off towards the north, and numerous rivulets and small streams made their way down to it. They had carried with them a quantity of stones and grit, which was piled up in small billow-shaped ridges for a long distance away. A big river, I felt sure, must be the eventual outcome of all these tributaries, but where the main water-course ran I could not as yet make out for the snow with which the ground was covered.

To the north the plain was bounded by dark, steep walls of rock; between them I concluded the river must cut itself a way down; and I thought it would be remarkable if I did not

find a cañon there too. As I approached the most northern part of the plain I saw a herd of polar oxen lying under some hills to the west.

My way led me past the herd at a hundred and fifty paces' distance. I went straight along the plain on my 'ski' without the slightest cover, and expected them to get wind of me every minute, but, on the contrary, they were quite oblivious of my presence until I was little more than two hundred paces from them. They then rose to their feet, twelve in number, and stood



I. VIEW OF DRIFT-ICE AT ISFJELDODDEN.

looking at me for a while, then suddenly set up the hillside and formed a square on the highest neighbouring knoll. They were all cows. There was not a bull among them.

As they started to run away I noticed that one of them had a newly born calf. The herd went up a steep snowdrift, eight or ten feet in height, and the calf made a brave attempt to follow, but when it had almost reached the top, lost its footing and rolled down to the bottom again. It fell so badly and helplessly that I thought it was killed, but to my surprise it rose to its feet and began to scramble up once more. Its second attempt

to scale the drift was no more successful than the first, and again it came rolling down. It cried piteously, just like a baby when it is very unhappy. I felt so sorry for it that I was just starting to help it up the drift when suddenly it occurred to me that the old cow might misinterpret my motives, and what then? I might risk a battle with her, and it would be a pity perhaps to have to shoot her in self-defence. I decided to remain where I was, and await the turn of events.

At last the mother heard the cries of distress, and came tearing down the hillside, the snow flying behind her. Heaven help the person who had meddled with her calf then! She would have made it hot for him. It was both amusing and touching to see the two together. The mother caressed the calf as if to comfort it, sniffed it all over to see if it was still whole, gave it a push now and again, and then started gently up the drift; but not the way the calf had gone in following the herd: she carefully chose an easier and less steep way.

When she had got it across the drift she ran a few steps forward, not very fast, but too quickly, at any rate, for the calf to follow her. Then she turned back and pushed it from behind with her muzzle, so that it went a little faster. Again she ran a few yards forward, but still the poor little thing could not keep up with her, and she returned to her old pushing methods. So they went on all the way up until they reached the square. Then she took her place in it, and the calf erept under her, and was entirely hidden from sight by her long hair.

This was on April 27. We had earlier passed many herds with cows in calf among them, and had also shot some with well-developed fetuses. In this herd there was only one cow with a calf, and it was probably about twenty-four hours old. All the other cows were in calf.

I continued on my way northward, and soon came down into a very deep cañon, the decline of which, near where I was, was gradual, without precipices or abrupt falls. But it was narrow—not more than fifty feet wide—with perpendicular walls on both sides. It made short sharp turns to right and left, and at every turn the walls overlapped so that the valley appeared to be closed

It was so gloomy down there among the dark shadows thrown by the walls of rock that I soon had to take off my snow-goggles. The snow was deep, too, and lay as it had fallen, untouched and unaffected by the wind. Mile after mile I followed the valley, which did not change in appearance until I reached a spot where a cañon from the east opened into it. After that it widened considerably, becoming broader and broader, and the sides less and less abrupt, with hare-tracks innumerable on them. Compared with this, what I had hitherto seen in this way was nothing. The snow was almost trodden hard by their pads.

It was time to stop now if I wished to get back to camp at a reasonable hour, but just to gain some idea of what there was northward, I went a little way up the east side of the mountains. There was little snow on the slopes, and the herbage appeared to be very luxuriant; wherever I turned I saw vigorous vegetation. The view, however, was not much to boast of, for to the north, which was the direction I wanted, it was entirely cut off by the shoulder of a mountain.

While I was standing up there looking round me, a herd of polar cattle came slowly grazing upwards in my direction. I had no wish to frighten the peaceable animals, and hid myself behind a stone. There were eleven animals in the herd, the greater number being cows, as far as I could see.

I had left my 'ski' behind me at the bottom of the valley before striking up the slopes, somewhat obliquely towards the north. On my downward way I found it easier to take a straight line to the bottom of the valley, and then follow it to the place where I had left my 'ski.'

As I was walking slowly down the slopes I saw a score or so of hares sitting nibbling the grass on a little stony hill. I made my way very slowly down towards them, just to see how near they would let me come. They soon caught sight of me, and slowly collected. At last they became an unbroken white mass at the bottom of the hill, where they arranged themselves with their heads inwards and their tails out. There were so many of them that there were several rings, one within the other, and it was a life-and-death matter to be in the inmost ring—at least,



II. VIEW OF DRIFT-ICE AT ISFJELDODDEN.

so it appeared to me, for they made the greatest commotion about it. They pushed and fought and bit each other till they screamed aloud, all the time slowly revolving, something like a millstone. This was the square of the Arctic hares!

After I had watched them for a while at ten or twelve paces, I turned off round them in order not to frighten them quite out of their wits; and after I had gone a little way I saw on looking back that they had begun to disperse about the hill, and were browsing again.

I now put on my 'ski' and set off as hard as I could for camp. Round about me, both before and after I passed the narrow cañon, the slopes were swarming with hares, which were out foraging. When I reached camp, at about half-past seven in the evening, I found the dogs hard at work gnawing some frozen meat which they had been given. They had made a clean sweep of everything else in the morning.

We drove on next day at our usual time; again passed the herd at about the same place where I had seen it before, and were soon down through the narrow cañon, although now and again we had to put ourselves, all four, to the sledges to bring them across the stony ground.

A little farther on we drove past a polar herd on the other side of the valley. Some of the animals were standing on a precipice; others were climbing up and down the steep stony slopes, looking like flies on a wall. When we were right under them they formed up on the precipice and stood glaring down at us.

It might be thought that in a country like this, teeming with both ground game and big game, there would also be a great number of beasts of prey, but this was by no means the case; and neither in Vendomfjord nor on Troldfjordeidet did we ever see the track of a wolf. Indeed, everything indicated that the latest 'wolf period' existed in times far back. If ever a new immigration takes place, they will very soon reduce the edible game up here. All these hare-tracks were one of the most extraordinary things I had ever seen; never could I have imagined that their pads would be capable of making such enormous runs!

The farther we went the more numerous were the hares, and

later in the afternoon, when we reached the lower valley, they seemed to be conjured forth from the slopes as if by magic. There were such legions of them, and they scurried about so in all directions, along the valley and backwards and forwards across it, that the dogs became absolutely unmanageable. It was impossible to keep them in check; they gave chase time after time; and the hares themselves were so dazed that they had not the wit to keep out of the way. They did not appear to be afraid; they hopped about only a few yards in front of the teams. At last, after the dogs had bolted after them time and again, we finally landed in the steep bank of a river. It was impossible for the dogs to drag the sledges up on to the grass at the top, but as each team was determined to pass the other, the end of it was that the whole caravan stuck fast, sledge by sledge, under the top of the bank, the dogs themselves just managing to reach the grass. There they sat down on their haunches, and let the sledges dangle down the bank.

As if to incite the dogs to the utmost, the hares came and settled down a few yards from them, and then stood on two legs and stared at us. The dogs yelped and snapped and made a shoeking clamour, and the hares? They never moved from the spot! What were we to do with them? We had shot quite as many as we wanted to eat, and had no wish to destroy them uselessly, but they had to be got rid of somehow.

We made up our minds to raid the valley, and clear these tiresome vagrants from under our feet, for it was impossible to drive with the country swarming with them in this way. After a good deal of trouble we succeeded in driving away the greater number, and were able at last to go on.

After a while we came down to a large wild valley, which ran about north-west and south-east. It was so absolutely flat that for a time we took it to be a fjord, but when we saw numbers of large stones projecting above the snow, our doubts were quite dispelled. We drove out through this big valley, past numbers of hare-tracks and herd after herd of polar cattle grazing on the grass among the precipices, and took a line for the east shore.

There must be a superabundance of water here at flood-time.

Stream after stream ran down the slopes; the valley was at least a mile in width, and the high steep banks on both sides of it told their own tale. It gave me the impression that in the spring water must run over the whole of the bottom of the valley—truly a sizeable water-course.

Later in the evening we steered on a projecting spit of land, where we had decided to camp for the night, and whence we hoped to be able to see the fjord on the other side. This time, actually, we were not disappointed. When we had come so far that we could look round the point, we caught a glimpse of the fjord, enough to tell us that it was no pigmy we had to do with.

Our tent we pitched by the side of a low sand-hill, a couple of miles from the fjord. We had a good deal of observing to do, and took an azimuth, and observations for longitude and variation.

Had our excitement of late been great, and our anxiety lest we should not find ourselves in the much-discussed fjord no less, we were now equally eager to find out for certain whether this was the right fjord, or whether it was only the one Isachsen and Hassel had looked into the previous year. The others declared themselves convinced that we were now entering the promised land. I thought we had borne a little too far to the east, and was very much afraid that it was Isachsen and Hassel's fjord ('Storfjord,' or 'Great Fjord') we now saw.

Next morning, while Fosheim was occupied with an observation for longitude, and the others were dividing provisions and so forth between the two sledge-parties, so that we each had our own things, and could separate if necessary at any moment, I went a reconnaissance down to the shore. The fjord was very large, and in a direction about east by west penetrated some twenty or possibly thirty miles inland. Iceberg after iceberg towered in fantastic majesty inwards up the fjord; and east of it, far inland, I could see a glimpse of the 'inland ice,' like a white stripe under the horizon. On the north side of the fjord the coast did not answer at all to the description I had had of it, though as far as some islands were concerned it certainly did agree.

I thought and thought, but grew no wiser; the whole thing seemed very mysterious. Meantime I decided to drive towards

the most north-westerly point in view, and on the way go under one of the northernmost islets.

We were so late in starting, that when we reached the fjord-ice it was already time to take a meridian altitude, for it was very important that we should keep a knowledge of our whereabouts. I therefore decided to camp at the aforesaid island, in the hope of getting a good view over the waterway to the north from the top of it. The observations, too, had to be worked out as soon as possible.

Both weather and going were good, so that we made rapid progress across the fjord, and later in the afternoon camped beside an iceberg in the sound between the islands.

CHAPTER XIV.

HEUREKA!

WHILE Fosheim was working out the observations I meant to take some bearings from the island. I thought at first of going without my gun, as I had so many other things to carry, but at the last moment changed my mind.

I had hardly passed the iceberg, when I suddenly saw a bear away by the crack. It stood still a while glaring angrily at me—perhaps thinking I was taking a liberty—and then turned tail and ran off. I threw a few shots after it without much hoping to hit it at such long range.

Thinking it better perhaps to provide myself with a few more cartridges, I went back to the tent with this intention, and then continued my march. The bear was going along the crack out towards the point, and I had already given it up when I saw it suddenly lie down. This was matter for investigation, so I walked towards it, but when I was about within shot the fellow got up and seemed as if it meant to make off, whereupon I had another blaze at it, and it fell.

I had taken off my 'ski' on account of the pressure-ice under land, and at this juncture went back to fetch them, but on looking round I discovered that the dead bear—whose first duty must assuredly be to lie still—had got up, and was stalking up the hill-side. I fired again; it dutifully fell, and there, of course, was an end of it.

I began to collect my things again, and as I was raising myself to go, I saw the bear disappearing on the other side of the ridge! One learns a good deal from foreign travel, but as yet I had never seen a dead bear that was quite so fleet of foot. But

I was as quick with my rifle, and sent it a shot in the hind-quarters, and a blessing, and therewith it disappeared over the ridge.

I was nearer believing in witchcraft than I had ever been before in my life. At any rate I began to lose faith in my sportsman's catechism. But it was as well to take the matter quietly; I continued my way, and was soon up on the point. There I saw the fugitive lying down by the crack, motionless. At last, then!

I had no time to go down to it then, having more important things on hand; and besides, the others in camp would probably see to it. I reached my destination, which was the top of the island, and began to look round me, involuntarily glancing in the direction of the crack. But the bear? Heaven preserve me, it was gone again! Was it an optical delusion, or was everything bewitched, the bear, my gun, myself?

Well, thank goodness, I could see the bear, at any rate, going at a slow trot a good way out on the ice; it glared sideways at me. To shoot from here would be useless, but probably it felt how my eyes burned as I gazed after it, for suddenly it rolled over and lay quite still. It was more or less in earnest this time, I supposed; anyhow it did not move again.

The view from the top of the island was splendid. It appeared to me that a great expanse of water stretched away northward from the point I saw farthest off in the north-west. I also saw a wide fjord running due west, but no matter how I turned it about, I could not make it out to be anything but the fjord which Isachsen and Hassel had visited, and which had been given the name of 'Storfjord.'

On this island, too, I saw some hares hopping about in undisturbed enjoyment of their existence; they had not the intelligence to be shy, and I could easily have shot them.

After supper Schei, the mate, and I sallied forth to fetch the carcase of the bear, taking all the teams with us. To get there the more quickly, we meant to drive the dogs without sledges, that is to say, by holding the traces and letting them drag us along on our 'ski'—'snörekjöring,' or 'tow-driving,' as we called it; we should be there in less than no time. The dogs had not

scented the bear, but they knew that there was something in the wind, and went like mad.

Things went splendidly—for a little way. But south in the sound we came across some very high snowdrifts, and then matters were not so pleasurable. We had got on a very respectable pace by this time, and when we set off down the sides of the drifts we ran into the dogs and fouled our 'ski' among their traces. The pride of the 'tow-drivers' ended in a fall. But



AT SMÖRGRAUTBERGET. 1901.

little the dogs cared for this; when they found a weight behind them they merely hauled the harder; the snow spun up in clouds for yards above us, and I was glad enough to let the whole thing go, and saw that the others did the same.

But as I said before, the dogs had not winded the bear, and no sooner were they free than they straightway made for the island in the south-east.

We accordingly set off alone for the bear, but if it was not a miracle-bear I know not what is. The animal lay blinking at us, as much as to say, 'There is life in me yet!' The mate opined that it 'wasn't ready for flaying,' and most certainly it

was not. I asked Schei to finish it off, but if I remember right he had to give it two or three shots below the head before we could begin to skin it, but by that time it was comparatively dead. We had of course taken the camp-kettle with us in order to make ourselves a savoury black-pudding, but the bear cheated us in the end. Not a drop of blood was to be found in the whole of its body, and I cannot conceive how it remained alive for so long a time. Not one of the last shots had gone astray, but from my position I had been unable to hit any vital spot. The animal had died of loss of blood.

When the dogs again put in an appearance, after a long absence, they were well feasted, and the remaining meat tied to the traces so that they could drag it back to camp, and all the teams have a midnight supper. In the meantime Fosheim, as an answer to his calculations, had made out our former camping-place to be on long. 84° W., while the meridian altitude taken at noon gave us lat. $78^{\circ} 50'$ N.

Next morning we went on again, keeping the same course, but with the snow rather heavy and slow. The dogs, moreover, had so over-eaten themselves that they were indisposed to work. My condition all day was one of feverish excitement. It was only a matter of reaching the point we were steering on, and the all-important question which so entirely occupied us all—whether there were sea farther north or not—would be solved. By degrees as we neared the point the going became harder and harder, and we soon found ourselves in the midst of young pressure-ice, which was very difficult to drive in.

By one o'clock we reached the point. We drove up to the crack, made a short halt, and fortified ourselves with bread and meat; for it was necessary now to be equal to the situation. We were about to face the solution, that we all felt; but whether it would bring us bitter disappointment or jubilant gladness was still a sealed book to us.

We then went a little way up the talus. Never before had we scanned land and shore with such excitement. And what did we see? We saw a beautiful large sound extending northward as far as the eye could reach!

Straight across the sound, southward towards 'Storöen,' or 'Great Island'—as we called the largest island in Storfjord—and as far north as we could see, the waterway was covered with pressed-up autumn ice, horribly difficult to make one's way in, apparently, but little we cared for that. We had looked into the promised land. We gave a sigh of relief, one and all, and were as happy as children over it.

There was no doubt that we must have a dram in honour of the occasion. Out with the bottle! Schei and I had forgotten to bring any spirits from the ship, so Fosheim and the mate had to treat us, and they did it with pleasure. Hardly any one of us was in doubt, I think, but that this was the best day he had experienced on the whole expedition. The strain of late had been excessive. More than once we had lost courage at the thought of all the unavailing and impracticable ground we had found ourselves obliged to travel over. And what had we not hazarded in order to attain it! Six teams—and six teams mean a good deal to an expedition like ours. Had we not reached here I should almost have considered our spring season wasted.

Fosheim was again ready with a name; it had probably been simmering for some time, for he had it pat to the moment, before any one else had time to make a suggestion. He called the sound 'Heureka Sund,' and that is the name it has kept.

The ice being so difficult along the east side of the sound, we took a diagonal line to the west shore, and camped that evening about half-way across.

We had seen numbers of bear-tracks all the day, even hard-trodden ones on the top of a small iceberg which we mounted to get a view. Probably it was an outlook of the bears, although it was not the only purpose they put it to, for we plainly saw that they were in the habit of coasting down the sides.

We saw likewise numerous wolf-tracks, and during the night the dogs turned us out. Schei emerged from our tent; Raanes from the other. Some way off on the ice they saw two white animals, which at first they took to be bears, but on closer inspection they became wolves. They kept well out of range, however, and at last went off south.

Without over-runners, and on the plates of German silver only, we set forth next day, obliquely up the sound, towards the west shore. The sledges travelled fairly well, but, as bad luck would have it, there was a biting draught of north wind up the sound, which caught us mercilessly. It made one feel as if one would like to wrap up one's nose, or at any rate wear a mask; but the first man in a caravan wants his eyes about him more than the others, and ought not to encumber himself with a nose-mask.

A little before noon we reached the point. It was the first of May, and we christened it 'Maiodden,' or 'May Point.' From here the sound ran north-west, and it began to dawn upon us that, when we first discovered the sound we had overlooked the great lowlands we now saw in the north on account of their distance away.

We made our midday halt between some large blocks of ice which lay pressed up on land, and afforded some shelter from the wind. A meridian altitude showed our present latitude to be $79^{\circ} 17'$.

As the snow seemed to be getting heavier, we decided to try what it was like under the lowlands, and thither we accordingly steered, camping a few miles from land.

It was long now since we had seen any polar oxen, but that evening we saw a herd up on the cliffs to the west, and the same the following day. The two herds, however, were perhaps identical.

The travelling did not improve, so next morning we set our course obliquely northward under the west shore. A good way south of Maiodden, and for many miles to the west, as far as we could see, stretched large plains. The land rose evenly to the north, until it suddenly shot up into a ridge out on Depotodden, and from there fell precipitously into the sea; while inwards from Depotodden the whole country was a continuous lowland. On the east side of the sound, north of Maiodden, extended—I should imagine right up to Greely Fjord—a widespread lowland, which in certain places out by the sound had a margin of wild, broken mountains. Straight across the sound glittered great pressure-ridges in long parallel ranks, just as in Baumann Fjord.

The ice improved by degrees, and near the headland on the west side, where it was bright and slippery, we went a splendid pace. Under the lee of a big pressure-ridge, which stretched from the cape right across the sound, we made our midday halt. There also I decided to leave behind our wooden runners and a box of dog-food containing one hundred and eight rations.

We now set the course on a high bluish-black precipitous promontory which we saw to the north, and which we called 'Blaamanden,' or 'The Blue Man.' From some way out on the sound we saw that west of Depotodden a fjord cut into the land, in a southerly direction, but for how great a distance we could not say, as the land to the south was so low.

We had had a fresh breeze all day, and when we camped in the evening out in the middle of the sound, we were even more fully alive to the fact. Taking our observations was not pleasant work that evening, and one need not be extra tender for one's fingers to feel cold in such circumstances. Next morning we went on in the usual way, paying a short visit, however, to a largish iceberg a little way south of Blaamanden. It was one of the usual bear outlooks, and the snow round it was cut up just as in a market-place. We agreed that the first party to pass it on the way south should leave a letter near the iceberg.

A little north of this spot a high pressure-ridge tried to bar our way; it lay right across the sound, but we soon found a reasonably easy passage across it, and discovered at the same time that a pack of wolves, ten or twelve in number, had just passed that way. We then pushed on at a good pace northwards on the slippery ice; but, farther north, so much sand had been blown on to it that our progress was impeded. At noon we stopped to take a meridian altitude, and, as Fosheim and I had much to talk over before we parted company, both in regard to the surveying and other things, we pitched the tents at once.

We held a council in the afternoon, took observations, and indulged in a little conviviality, being invited by Fosheim and the mate to coffee and liqueur brandy in their tent. A single bottle for the whole season was not very much to draw upon regardlessly, but they were liberal to the last, and declared that they

meant to be so economical with the rest that they should have quite enough till and for the Seventeenth of May.

We agreed that Fosheim and the mate should follow the east side of the sound northwards; Schei and I the west side as long as we could. The land to the east appeared to be a large island, and if our surmise should prove correct, they were to try to go round it, and in such a case would not return this way. Of the waters north we knew little more than what we thought to see. The sound appeared to be of considerable length, and widened out as it went northward; we were unable to see land in the distance. In the midst of the waterway, far to the north, there rose a mountain crag—blue, precipitous, and very large; in appearance like an island. Later on we found that this was no island, but that large fjords penetrated the land towards the north and east. It is from here that Greely Fjord runs north-east for many, many miles into the land. Due south of us there also appeared to be a fjord, on the western side of which we thought to see an island, but the distance rendered it impossible to distinguish anything with certainty.

We spent a very pleasant evening, and the following morning Schei and I went on north, while the other party set to work to repair the plates of the mate's sledge. After driving for a couple of hours on flat ice, we found ourselves in the midst of some old polar ice with enormously high melted-off ridges and deep dales, where the snow was as loose as sand. At the same time the clouds gathered as if for bad weather, with a northerly breeze and slight fall of snow. We then bore across to the west shore, and by degrees got into winter-old ice, where progress was quite easy.

On this side of the sound the land was very high, with gentle slopes and well-defined river-valleys.

Later in the afternoon we shed another tin of dog-food, and a can of petroleum. We cached them in a snowdrift, and left my 'ski'-stick to mark the spot. Two or three miles farther north we reached a point whence a fjord ran westward. The land on the north side of it looked very much like an island, but of this we could not be sure. Out on the bay, north of the point

was a row of icebergs of different sizes, both large and small, and old polar ice lay pressed close up to them.

It was our intention to drive straight across the bay and steer



NORTHERNMOST POINT OF VAKKERKAP.

on the farthest northward point in view, but a little way north of the icebergs we entered difficult ice, and as the weather was bad and thick, and our driving day nearly ended, we encamped in the midst of the old ice.

We struggled hard with this ice next day, but without being able to get the better of it, and in the end were forced to make a long circuit inside the fjord. Inside on the bay the snow was deep and loose, and the sledges travelled terribly slowly. It was long before we had crossed the fjord, and when we had done so what we saw was by no means enlivening. As close as ever under land lay the old ice—upheaved, in utter confusion, closing the way on us. We had to take to the ice-foot, but, bad as the ancient ice had been, the ice-foot was doubly slow. Yet, what were we to do? Set our teeth and press on.

The land was very low, with long projecting stretches of sand, and it appeared to sustain a vegetation that was both abundant and equally distributed. No wonder that on the ice-foot there were hare-tracks innumerable. A little way above high-water mark the hares had their feeding-ground, where they had rooted and burrowed in all directions.

On closer investigation we saw that all the tracks led towards the drift-ice; not one went landwards. The hares probably spent the daytime out in the drift-ice, where the caverns and grottoes afforded them very much better security against foxes and wolves than the open and unprotected plains of the lowlands. A shooter walking these tracts in pursuit of hares in the summer months would probably not set eyes on one of them; and I have often noticed that the very places which at this season are swarming with hares may be scoured in vain by day or by night at the time of year when the drift-ice is not in a condition to afford them a hiding-place. They then migrate farther inland, for they cannot live in tracts where they are unable to find shelter from their enemies. We had noticed hare-tracks for long distances out in the drift-ice the whole way since we came down to the fjord from Troldfjordeidet, and they were quite numerous even in the middle of the fjord.

We hauled and laboured along the ice-foot, and sometimes put ourselves to the sledges along with the dogs; but the moments were not many between each stoppage. By dint of much exertion we reached the point of a long out-jutting stretch of sands, on the north side of which the drift-ice had been pressed right across the



FROM BAUMANN FJORD.



crack and up among some steep sand-hills which extended as far to the north as we could see. We had to take to the sea-ice then, after all; but along a furrow where advance was fairly practicable we eventually worked our way up on to a large old floe which we were able to follow along the shore for a while. The going, however, was as miserable as ever. Round the floe lay enormous pressure-ridges, several times the height of a man; and away through the sound, as far as we could see in the hazy atmosphere, lay ridge after ridge.

From the drift-ice we saw a herd of polar oxen up on land; as far as we could distinguish, it consisted of eleven animals.

We camped for the night between some large hummocks, and continued northward next morning in fairly clear weather, but our hopes of fine weather were completely dashed. No sooner had we begun to drive than a wind sprang up from the south with continually increasing fog.

As we were driving along two wolves came running slantwise up towards us. They thought they were going to meet us some way out on the ice, the rascals. They ran under cover of some hummocks, so that I did not know they were there until they were within a hundred yards of me. The dogs saw them at the same moment, and, of course, tried to give chase; I only just managed to stop them by overturning the sledge.

I had now to get my rifle out. But when the dogs were stopped in their career they had begun to whine and howl so vociferously that the wolves were frightened, and made off at such a pace that by the time I had my gun ready they were at least two hundred yards away. I would not risk missing them, and so drove on again. The wolves ran in front of us for a time, but always took care to keep well out of range. However, it was a practical arrangement, for the dogs were desperate to catch them up, and we got along considerably faster with them in front of us as a bait.

As might be expected, the wolves soon grew tired of being our outrunners, and made for land, where they sat down a good way from each other on a sand-hill above the crack, and treated us to a terrible howling duet. Schei was keen about shooting of any

kind, but especially about wolf-shooting. He had already been near some on two occasions, and had once fired at one, though without bringing off his shot. He now tried repeatedly to set me on to the wolves; at first without success, as I thought it was only throwing away time. In the end, however, I consented to have a shot at them.

Schei then drove on both the teams, while I went behind a small iceberg, and began to stalk the beasts; but to get within reasonable range of them was impossible. I saw I should have to risk a shot at them, even though I was likely to shoot wide. I accordingly took a very full sight, and aimed so high that I only saw the top of the wolf's back, and when the animal turned broadside on for a moment I let drive. At almost the same time I heard a howl like a dog's; up jumped 'Greylegs' into the air, and came spinning round and round down the hill-side, like a top, until he reached the flat ground. There he fell over, not to rise again. I came up in time to hear him draw his last breath. I then knotted my 'ski'-strap round the fellow's neck, and marched off with him down to the ice. He was a huge beast, in his prime, and it was as much as I could do to drag him along in the loose snow. And such a mouth and teeth! They were almost like those of a young bear of tolerable size. Schei had kept an eye on things, and when the animal fell came driving up. We hastily skinned the carcase, and flung the flesh to the dogs, but not one of them would touch it. Even 'Mosaiken' wrinkled his nose, shook his head, and said, 'No, thank you;' and he was by no means dainty—on the contrary, he ate like a pony. He rivalled 'the Tiger,' nay, even greatly surpassed him as a thief, for whereas 'Tiger' was a bungler who was always found out, 'Mosaiken' was a scheming Laban, cunning as an accomplished pickpocket. His speciality was filching stock-fish and meat from the sledge in front of him without disturbing the load, as dogs generally do, much less letting anything fall.

While all this was going on, the other wolf retired a couple of hundred yards, but sat down again a little farther off; there we

heard it howling unremittingly, until the sounds were lost in the distance.

Farther north the going improved, and at a point which was later named 'Smörgrautberget' we got on to a splendid ribbon of even ice with good snow on it, where a lane had been the previous autumn. The breeze gradually increased to a moderate gale, and with this at our backs we were swept northwards, the snow flying round us.

A little way off the point we pulled up to look round, but it was not easy to make out our surroundings. We only saw that a short distance away, where the young ice stopped, the drift-ice was as ugly and impracticable as before.

We then kept under land, but suddenly the young ice came to an end, and we found ourselves in a perfect maze of icebergs and ancient polar ice, which lay mixed up together in dire confusion; with here and there enormous drifts between. To try to make our way in thick weather through such ice, where there was pitfall after pitfall ready to swallow us up, was absurd. The dogs crawled up the steep drifts like flies, and straightway disappeared over the other side into deep hollows, and when the loads turned the top and rushed down the slope, both sledges and dogs were often within an ace of being destroyed.

We had been using our 'ski' up to this time, but here we had to take them off and put them on the loads, though how to get on without them in this pressure-ice we did not know. The drifted snow was not hard enough to bear, and often we sank to our waists between the blocks of ice.

When we were heartily sick of the whole thing, we camped under the lee of a big hummock a short mile from land. We could just discern through the driving snow a big valley right behind our camp. We made up our minds to look at it; it would be interesting to see something of the land we had reached; so after a light dinner we buckled on our 'ski' and started inwards.

We had some hesitation about doing this, however. The tent was well hidden between the high-pressure hummocks, and could we find it again? But necessity is the mother of invention; we agreed to furnish ourselves with a sizeable quid apiece, and at

every tenth step, in turn, mark the spot with a generous jet of tobacco-juice. As long as we were careful to aim at the higher parts there was no risk of our 'landmarks' being obliterated by the drift. The invention was simple and practical, and Heaven knows there was colour enough on the snow!

Up in the valley there was not snow enough for our 'ski,' and we had, consequently, to take them off. We began at once to see numerous traces of hares and polar oxen along by the side of the river. The weather, however, was too bad for us to expect to see small game, and the tracks of the big game were fairly old. Schei followed the east side of the river, while I climbed some ridges on the west side. Notwithstanding the great number of hare-tracks, I was astonished when I saw a hare up on one of the ridges. I potted it in its form; skinned it on the spot, and took it back with me.

To judge by the little I saw of the drift-ice, it was of the same kind as out by the camp.

I found my way back without difficulty, and began to cook the hare, but Schei was late in returning: the supper was ready, and still he had not come. I began to be anxious about him, and went out to see if he were in sight.

The wind had steadily increased, and bad as it had been when we went ashore, it was ten times worse now. But I had absolute faith in our patent landmarks. The brown dabs had led me splendidly, and I had not been stingy in further contributions on the way back. At last—there he was, safe and sound, following the browns! Except some coveys of ptarmigan, he had not seen a living thing.

Next day, May 7, the wind had gone down, and in return we had drift and thick fog. We pressed on again, and, after manifold tribulations in the pressure-ice, at last reached a place where we could take to the ice-foot.

Close off land, all the way along the coast, was a border of damaged icebergs which had been pushed ashore, and against which the polar ice was piled in great masses. It was these icebergs we had to thank that the ice had not been pressed right over the ice-foot.



GLACIER IN BAIDSEFJORD.



The snow was terribly loose and heavy, and the sledges would hardly run. We pushed on as best we could; but then the land began to trend suspiciously to the south, and at last we found ourselves driving due south. We had no wish to continue in this direction, so, as the fog was impenetrable, we thought it wisest to camp and wait till we could see our surroundings. We pitched the tent out by a point. Later in the evening we went a walk



TWO HALF-YEAR-OLDS.

ashore, and there saw the tracks of hares and horned cattle, but not an animal of any sort.

We remained weather-bound at this camp until May 12. Walls of fog, one thicker than the other, came rolling up with the wind, and the ice was impracticable. Everything to the west of us was a closed book, and we were quite uncertain where we ought to drive next. Had the ice been in any way negotiable,

we might just as well have worked on west as lie still, but as things were, I thought we could do nothing before it cleared.

On the night of May 11 the fog began to clear, and we decided to drive back to 'Smörgrautberget,' which lay in a particularly convenient position for observations; for one reason because we could take azimuths to the different fjords. The wind had swept away all the loose snow, and the ice was irreproachable. Driving across a large bay, we saw, at the head of it, a herd of polar oxen; they formed into square up on a precipice. How many there were I do not know; but a good many. We left them in peace, for meat was not what we wanted just now, but to get on quickly.

On the same bay a colossal iceberg had come to anchor. We measured it, and its length was not far off a thousand feet, while its breadth was almost the same. It was about forty feet high, and table-topped. We then continued northward, and in brilliant sunshine and calm weather pitched our tent about midday at the northernmost point of Smörgrautberget.

We took an altitude, cooked some dinner, and went ashore. On the top of the point I took a few bearings, and set off some angles between the fjords and points.

North of us was a very high mountain, which fell perpendicularly into the sea. So overwhelmingly large did it appear to us that we both thought it to be, without exception, the highest mountain we had seen on the expedition. Afterwards we called it 'Blaafjeld,' or 'Blue Mountain.' East of this spot Greely Fjord penetrated far into the land towards the north-east. In the opposite direction the land continued far, far, to the west, intersected by great fjords.

In about the true west rose a lofty mountain, which we called 'Kvitberg' (White Mountain). West of this, again, the land ran on in the same direction, but far away on the horizon it began to trend north. To all appearance the two shores overlapped, but we received the distinct impression that a large sea opened out to the north-west. Due east of us, on the other side of the sound, stretched extensive lowlands. Where the land ended and the sea began we could not decide, but at any rate we saw so much as that

a largish fjord cut far into the land south-east of a point which Fosheim named 'Isfjeldodden,' or 'Iceberg Point.'

While I was taking our bearings and rounds of angles Schei hammered and dug among the rocks. After my work was finished on the point, we went down to the ice-foot, and started to go up the level country a little south of the camp. Our first thought was ruins of Eskimo habitation; and down by the shore we really found five tent-rings and some remains of fox-traps.

We parted company at a little river, and Schei went inwards to the east of it, while I followed the west side. In due course I came to a lake and walked about round it for a while to look for vegetation; but there was hardly a plant to be seen, notwithstanding that the wind had so swept the country that there was scarcely a snowflake left on it.

Some way inland I struck a more easterly direction, ascended some high ground, and finally came down into a valley where there was a good deal of vegetation and numbers of hare-tracks. I had not been walking long before I saw two hares coming towards me across the level ground. They were at their old tricks again, and were running on two legs. If the hares up here go on like this, who is to foresee the result? Perhaps somebody coming here a thousand years hence will find them with rudimentary fore-legs and only their hind-legs for use.

They were coming at such a pace now that I knew it must be that wretched Schei who was frightening them. I soon saw him coming in the direction whence the hares had appeared. The latter, meanwhile, had begun to browse on some flat ground. I went up to Schei, and we agreed that he must go within close range to be sure of hitting them, as he had only a carbine, and, with such a weapon, one must be pretty steady-handed not to shoot wide.

The plain made a bend here, like a long wave—a regular Atlantic roller. Slowly, and with exceeding caution, Schei crawled forward prone to the earth. Then he steadied himself with both arms on the ground, and aimed. I would have laid a hundred to one on a miss here, for to shoot along the ground like this is exceedingly deceptive. The projectile, which must just

clear the ground, generally ends by going too high, and besides, in strong sunlight, as there was then, the atmosphere always quivers, and the size of the object is exaggerated.

I stood still to await results. Would the hares remain sitting, or would they run away?

At last! There was a report. What happened was exactly what I expected. The hares reared, looked round, astonished, and stood a while on their hind legs. Schei lay as still as a drowned mouse. The hares soon settled down again, and began to browse anew.

A little while, and—exactly the same performance! The animals up here are so used to the cracking and crashing of the ice that they think nothing of a report. Then one of the hares began to hop towards Schei, and every time he blazed at it, it came a little nearer, nibbling a blade of grass here, or a leaf there, precisely as if nobody was present.

What shooter—geologist or otherwise—would not be beside himself at this sort of thing? Schei lay and shot and swore till the sparks flew off him up on the ridge, while I was convulsed with laughing. When the hares were twenty or thirty paces off, Schei discovered the reason why he was shooting all over the place in this way, and raised himself so far that he no longer shot along the ground. Then he picked off the hare, and sighted for the other, which he killed at the first shot.

We had now two brace of hares, as he had killed one brace already. We skinned them, and turned our faces homewards.

CHAPTER XV.

A DYING PEOPLE.

IT was so late in the season by this time that we deemed it better to turn southwards towards the 'Fram.' Between us and the ship was a large country deeply indented by great fjords. We thought we could better make use of the time still at our disposal by examining them than by wasting it and our own strength in working a way through so much almost impassable ice.

We meant, however, to have a feast at our farthest point north, and bring out the best we had for the occasion. For the moment we could think of nothing more delicious than 'smörgröd' and fillets off the hares afterwards, by way of solid food. We therefore set to work to make real proper 'smörgröd,' with flour and the best Danish butter, according to all the prescribed rules. The 'porridge,' as we call it, we found so excellent that we straightway named the place, as I have mentioned before, 'Smörgrautberget,' or 'Butter Porridge Mountain.'

On May 13 we started back. The weather had changed by this time, and everything was grey, the air thick, the snow terribly slow going. We had not so much on our sledges now, it is true, but it was as much as we could do to drag them along, step by step, the whole way south. About midday we reached the place where I had shot my first wolf. I had left the skull behind, but I now thought I would take it back with me if I could find it. I found both it and the flesh which the dogs had scorned; it was lying untouched.

On our way on south we saw an old polar ox standing on a little sand-hill on a low point a few steps above the ice-foot. We

decided to have him, if he would only stay where he was till we were within shot, as we did not mean to have any following him inland. We steered right on the ox without the slightest cover, and he stood awhile immovable, looking at us; then, as he probably thought we were not getting on very quickly, lay down while he was waiting.

We were going down wind, so that the dogs did not get scent of the animal before we were a couple of hundred yards distant. Then, when they realized what the black patch was away on the sand, they made up for lost time! The ox lay quite still until we were within a hundred yards of it; then it got up, shook itself a little, began to sharpen its horns in the sand, and prepared to do battle.

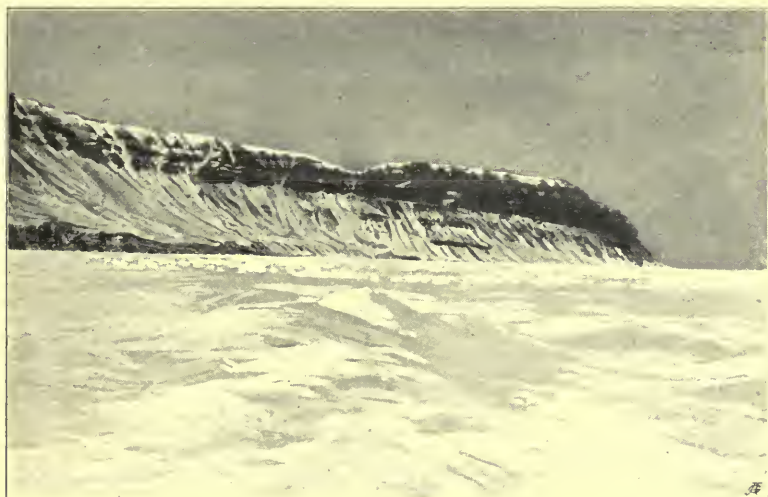
The dogs dashed over the crack and up on to the ice-foot, where at last I succeeded in stopping the sledge in a small snow-drift, sixty or seventy yards away from the ox. Then I loosed my team, Schei letting his remain in harness, as it is difficult to shoot when one has so many dogs round a single animal. Schei would not wait to take his 'ski' off before he started to settle the ox. At about fifteen yards he gave it a shot which had the effect of making it attack the dogs savagely in the opposite direction from Schei. At the same moment that it turned towards them he sent it another shot, and thereupon it made straight for the shooter. We saw it meant business, and truly it was not an insignificant assailant. 'Steady now, Schei!' I called out. He fired at the same moment, and gave the ox a bullet in the middle of the forehead. It sank to its knees, and so remained for a while, tearing up the ground. It was unable to rise, and did not think it worth while to fall. One shot more and then over it went.

Meanwhile I had got out the knives, and the camp-kettle for the blood. Originally we had been in doubt whether we should shoot the ox or not, but the prospect of black pudding had probably turned the scale, and caused the ox's death.

However, when I went up, and we began to turn the animal over on its back so as to begin to skin it, we discovered that we were decidedly premature. It was not nearly 'ready for flaying'; in fact, it was as alive as it could be. So then we fired a shot or

two more into the middle of its forehead; but it seemed as if it was impossible to get the life out of it. I never saw anything so horrible. Of course, it is not easy exactly to penetrate the brain in an animal of the kind when it is lying upside down, and there is so much hair in the way. So I felt about, and thought I could make out the bones of the neck, put the barrel of the gun to the spot and fired it off; but the animal remained just as much alive.

It was not until it was as riddled as a sieve that we felt sure



CLIFFS IN HEUREKA SOUND.

that it was dead, and could begin to skin it. The black pudding, however, we were done out of; there was hardly a drop of blood left in the animal. But though it had parted with its blood, it had not been able to get rid of its splendid marrow-bones; they were the biggest and best we had seen on any of our journeys. We took with us what was left of the meat after the dogs had eaten as much as they could. The skin we divided between us; it would be comfortable to lie on later in the spring when the snow began to melt.

Later in the afternoon it cleared up, and in the evening, when we camped, it was so fine that better weather could not be desired.

It was brilliantly clear, not a cloud was to be seen on the sky. The mountains up in Greely Fjord seemed so near that we could almost touch them. We had not had such a beautiful evening the whole of the journey. If only the good weather would last for a time! The thermometer was as high as 20° or 21° Fahr. (-6° or -7° Cent.), and the sun so warm that it felt almost like a summer day at home in Norway.

The dogs lay at length on the snow, puffing and panting, and quite done up with the heat. Some of them had so overeaten themselves that they could not lie in proper canine fashion, but



SEVENTEENTH OF MAY, 1901.

lay on their backs, with all four legs in the air, grunting and making such a noise, that we wondered what was going to happen to them. Little they recked, nor we either, that up in the crack, abeam of our camping-place, a herd of polar oxen were sniffing about. We had meat enough, and left the animals in peace.

As soon as the camp was in order we crept into the tent, and fell to on the glorious marrow-bones.

But how long was Adam in Paradise? Latish in the night we awoke with the sensation that we and the tent were all about to be swept away. The storm whined and howled; the canvas

shook. It seemed as if the weather knew pretty well where the tent-door was, for it blew straight at it; and the snow was in such drift, that the space between the inner and the outer tent, near the door, was soon filled.

This would never do—and, as the gale still raged, there was nothing for it, towards morning, but to get up and turn the tent so that the door was to leeward. We took the opportunity to see how the dogs were getting on, and some of them had to be moved to prevent them from being snowed down.

We stayed where we were the succeeding day. With such bad going, and the gale right in our teeth, we should not anyhow get very far. We had snow and wind the whole of that day, and the night as well, but with morning the gale went down, and we set off. By this time the wind had gone round to the south-west, and the drift was not so great, so that now and then we could see our way.

We forged ahead as fast as we could go. The snow grew better and better the farther south we went, and when the dogs winded some new bear-tracks, they set off as if possessed. When we were turning in towards land at Skräellingodden, where we meant to camp, and they understood we were making for shore, they dashed across the pressure-ridges, over the crack and on to the ice-foot, as if they meant to make an end both of us and the sledges, and did not stop before they were high up on the talus—a flight which rather took it out of the German silver.

By the time the tent was pitched, the wind had gone down a little, and the weather was so far reasonable, that we could go off in search of ruins. We thought this point was so conveniently situated, that if there were Eskimo ruins to be found anywhere about, they must be here. Nor were we disappointed. Not many steps from the camp we came on the remains of one construction after another—of tent-rings, store-houses, and traps, which plainly showed that these countries also had once been inhabited.

It is curious what great distances these people have spread themselves over in these inhospitable countries, where the night is of several months' duration, and the climatic conditions such that one would think all life must cease. What has become of them?

Have they migrated southward to milder regions? Or did they fight out a hopeless struggle against the cold and the crushing darkness of the winter night, until they all succumbed to the great enemy who knows no mercy?

It is a strange feeling of forlornness and barrenness which seizes upon one as one looks at all these ruins, ruins which tell of the human beings who lived here, and had their joys and sorrows like ourselves. Out here on the spits of land the air of the still, clear, summer evenings echoed to the careless laughter of these children of nature, and to the happy shouts of childhood. When autumn came, and the darkness was upon them, they mayhap withdrew with their well-husbanded summer catches to some sheltered spot, where were their winter houses, and there most likely lived out a languishing existence. In their miserable huts they waited patiently for the sun again to shed its light on the lofty peaks. Then they reawoke to life and action in the gladness of summer—though, who can tell, in many a hut, perhaps, where the winter store fell short, every human voice was dumb!

Week after week, month after month, we drove about up here, and never met with a single living thing, except wild animals. But any one travelling here in former times might have found people who lived and had their homes for always in this wilderness. It seemed to us almost incredible.

We made an excursion inland, and collected plants and geological specimens. The point we had examined projected from some rather extensive lowlands, which rose at an even incline towards the mountains in the distance for some way westward, along the coast, to the inner part of the big bay west of us. We were strengthened in our former supposition that the land to the north was an island, but we did not feel certain of it this time either.

Next morning, May 16, we set off in fine weather, and on snow which became better and better the farther south we went.

Three miles or so south of Skräellingodden we had to pick up our cache of dog-food and paraffin, and we accordingly drove close

in by the crack. Here the ice was blue and bright, sometimes in the form of pressed-up rugged young ice, and the dogs hauled as if they meant to go far from this world. We recognized the place again by the hollow of the river, the stones, and snowdrifts, but the 'ski'-staff, which we had put up to mark the exact spot, was gone. I began to dig at the place where I thought the things were buried, while Schei started to look at the stones on the talus. He followed the ice-foot for a little way, and there found the stick. A number of wolf-tracks told how it had come there. It had been well gnawed and was covered with dents, and its upper end had suffered a good deal. How the animals had got it up I cannot think, for I had rammed it well down into the hard-packed snow. They had some trouble in dislodging their prize, I should imagine.

Luckily I had hit on the exact spot where the things were cached. It did not take long to get them out, carry them down, and place them on the sledges. We then set off again southward, following a stretch of sand which extended a good way beyond the fjord on the north side.

We halted at noon under a great headland, which we called 'Vakkerkap,' or 'Fair Cape,' on account of its beautiful pure lines. Lofty and precipitous on the east side, and absolutely vertical on the west, it protruded towards the north in a long, sharp point, which cleft the sea-ice like a scythe.

Schei went mountaineering as usual. A number of stones had fallen down from the cliffs, and had landed on the ice a good way from the shore. They were nearly white, and so porous that big pieces of them could be crushed with the fingers. Schei was in a position to state that they contained gypsum, and that they only required burning to produce the finest plaster of Paris.

After taking some photographs, we went on again with a course for Blaamanden, steering at first considerably to the south, and thus successfully avoiding the old polar ice which had bothered us so on the trip north. We had first-rate going the whole way. As we approached the east shore we saw a herd of polar oxen up the bay, north of Blaamanden, but we would not stop for them, as we had some observations to take from the south part of that Cape.

This spot was particularly well situated for observations, especially for azimuths to different points, and we were anxious to reach it before evening. We camped on the south side of the big pressure-ridge, where we had seen all the wolf-tracks on the way up. The sharp wind went down latish in the afternoon, and the evening was unusually beautiful; still, and calm, with brilliant sunshine.

When we started on May 17, we took a line for the point on the east side of 'Mökkafjord' (Muck Fjord), as we wanted to gain a better idea of what the waterway was like in the west. The fjord appeared to cut far into the land, and to form the western boundary of the extensive low-lying country stretching south and east. From the point, which we fancied looked like an island, we hoped to get a good view over this level country, and thought we should be able to judge whether the land at the head of the fjord and southwards was glaciated or not.

The snow was hard and smooth, our loads light, and the dogs in splendid condition. They enjoyed the fine weather, and went at a gallop the whole way south; but as we approached land we found ourselves in some nasty pressure-ice and short drifts, which would have been very difficult to cross with heavy loads. With our light baggage we simply dashed over them till we see-sawed.

After driving for a couple of hours we reached the point, where we camped; the distance covered being thirteen miles. We had a cup of chocolate with bread-and-butter, and then went off; I with my sketch-map and instruments, Schei with his wallet for stones, hammer, chisel, and divers other necessary appurtenances.

We followed the ridge of the mountains west, until we could see to the head of the fjord, and got an instructive survey of the plain, which, slightly broken, stretched mile after mile, south and east, all the way to Heureka Sound. After that we went down on to some flat ground on the southern slopes to botanize, and saw there several tracks of polar oxen and hares. We reached camp again in the evening, took our observations, and made ready for a feast.

CHAPTER XVI.

SEVENTEENTH OF MAY—A DISTURBED NIGHT.

ALL our spare time the last few days had been devoted to thinking how we should keep the Seventeenth of May. The camp was decorated with flags, and as far as that was concerned, things were well enough; but it was the wretched food question which we could not make up our minds about. Olsen had presented Schei with a tin of fruit, and this it was in particular which harassed us. How were we to make the most of it? After racking our brains for some time, we settled on a pancake, the fruit to be eaten with it, and, to end up with, a cup of very strong coffee.

It was the first time we had made a pancake on a sledge-journey, and it would scarcely be correct to say we did it then. The ingredients were all right; egg-powder, flour, and sugar, but we could not get them to bind; and as for turning the mass, it was an impossibility. We had to scrape round it instead to prevent the whole thing from burning. When the pancake was ready it looked more like a kind of thick porridge than anything else; but no matter, it tasted excellent, and that was the chief thing; and we ourselves were proud of our cookery.

We had no brandy, but we quenched our thirst with strong coffee, and our spirits rose to great heights, not the less so because the weather was so enchantingly beautiful—a great addition to an entertainment of the kind. The snow round the tent was so hard that, in the lovely mild evening, we could walk about on it in our over-socks.

We chatted and enjoyed the glorious evening, and it was late before we remembered that it was time to go to rest. Our preparations for that were not extensive. We no longer lay

inside, but outside the bags, and had therefore only to lie down on them, each with his pipe.

We were just going quietly off to sleep when, at about eleven o'clock, we were aroused by the dogs giving tongue. 'Ha, ha! there's a bear,' we thought, and made for the door. But, look as we would, we could see no disturber of the peace. On the other hand, 'Sergeanten' and 'Svartflekken' seemed to have been blown away. What could that mean? We looked and looked in all directions, but could see nothing of either of them. Then I began to call them. It was useless, apparently, but I went on, and really at last they both came running up towards the camp. We felt sure there must be 'something' near which they had got wind of, since they had broken loose and run away. We tied them both up in their places and crept in again.

My dogs had such a way of gnawing their traces and harness, that I always had to muzzle them; they were muzzled on this journey too.

After this we lay talking a while; we could not make out what it was the dogs had winded. Little by little the conversation flagged, and we had just gone to sleep, when an uproar outside brought us to our feet. The dogs yelped and howled as if the end of the world had come. Schei was the first to stumble out through the door, and I was at his heels. Just as I was creeping out I heard him remark, 'What the devil is this?' and saw him seize his gun, which was lying ready to hand outside. I was very quickly out, and had hold of my gun. A large pack of wolves were making an end of my team!

I had been obliged to tie up my team in two lots on account of the three new dogs, for when the new dogs and the old ones were together, hostilities were kept going the whole night long. As we came out, six or seven wolves were trying to tear one of my old dogs to pieces; they had broken his rope and dragged him a hundred yards away from the camp; five or six more were standing ready to begin on my three new dogs.

Schei at once opened fire, and I followed his example as soon as possible. The minute the firing began the pack let go the duffer they had under them, and made off; the poor thing was



VIEW OF GAASEFJORD, WITH 'BORGEN' ON THE RIGHT.



of course long ago bitten to death. I was not a little surprised when I saw the dog move, get up, and shake itself. Yes, didn't I know it! It was, of course, the unhappy 'Svartflekken' who had been in hot water again. He came slowly up to camp, looking very much subdued.

But there was an old wolf which had no intention of being frightened off by such a trifle as a few rifle-shots, and was not going to let 'Svartflekken' off so cheaply. He started slantwise towards him. But when 'Svartflekken' saw what he was about he stopped short, faced his enemy and showed his teeth as well as he could for the muzzle. The wolf was not quite so courageous after that. It stopped, and then they both began to walk sideways towards one another, show their teeth and growl, though both were half afraid. Amusing as this might be, I thought we had had enough of it by this time, and sent the wolf a bullet through both shoulders, which laid it low. The rest of the pack were by this time in wild flight up towards land, and only two animals were left lying on the field of battle; but of the fugitives Schei had wounded two so severely that they could not keep up with the pack. They turned off into the drift-ice, where they were lost to sight between some hummocks, and there probably they died.

Altogether twelve wolves had attacked the camp. The tracks showed that they had made an onset from two sides at once, and my dogs being dispersed, they had made for them first. Schei's dogs, which were all lying together in another place, had probably seemed rather too numerous for a beginning.

'Svartflekken' was in a terrible state. His head and neck had suffered most, and both his ears were bitten off almost to the roots. Drip by drip his tracks were red with blood. His face swelled up, so that at one time he was stone blind with one eye, and I should say saw very little with the other. On the whole, he was not of much use till far on in the season. But just now he was the hero of the moment: his fellow dogs sniffed him, licked him, and did what they could for him, and he vouchsafed to suffer it.

There is some character about these dogs! 'Svartflekken' had not been especially attacked; it was only that he was

clumsier, and could not take such good care of himself as the others. From the beginning I had never liked him; he was a street dog in many ways, and was often savage, but he could look so inestimably mischievous! Wits he had too—he stopped gnawing his trace, and so got off wearing his muzzle for the rest of the journey. He knew the sense of that.

Schei skinned one of the fallen—the one he had shot—and cut some bits of skin off the other. We had so far to drive that we did not want to encumber ourselves too much. I set to work to make coffee, for we thought we must have something after all this commotion. Meanwhile the survivors of the pack sat up on land, just the other side of the crack, and gave us a Doomsday concert for having deprived them of a midnight meal.

As we were sitting comfortably over our coffee inside the tent, we heard the dogs singing out, for the third time! I went out to see what was the matter, and discovered a couple of wolves a good way off in the south, stealing up towards the camp. They were not very near each other, and, as well as they could, kept under cover of the drifts and hummocks. While I was waiting for them to come within gunshot, I lay down behind a sack of dog-food, just outside the tent-door. But they took their time, the beggars, and sneaked slowly along; for long whiles together sitting down on their haunches, and staring at us.

Well, I did not care to wait longer, I thought, and must chance it, although the range was not far off three hundred and fifty yards. I sighted for the nearer of the two wolves. Almost at the same moment that I fired it bounded into the air, and began to whirl round and round, until at last it fell. It had got enough; and the game up there was rid of another beast of prey.

I thought it would be quite interesting to see if I could finish my coffee in peace. I did it this time, and had a smoke afterwards, and a long one too. Then out we went again. I had still a wolf to settle, and Schei, having once tasted blood, wanted more. The wolves were still sitting among the rocks, and on the ice-foot, howling inordinately. Schei could not withstand them, he had to take pity on and go to them; they were probably howling for him.

First of all he tried to take them in by pretending to be big game grazing. He went round and round on the grass, and did all he could to look like a calf, but he was not altogether successful. They howled on, and, as it were, challenged him to come nearer, and they would give him what for! Then he tried stalking them; but each time he was behind cover the pack moved, and when, according to his notion, he had come within range, they were sitting in quite another place, and hissed him for his pains. He soon grew tired of it all, and came back to camp.

There was still life in my last wolf when I went up to it. It is quite remarkable how long a time life clings to these animals. The bullet had disembowelled it and crushed the hind-quarters; but, notwithstanding, I felt warranted in giving it a shot in the neck. Even to a wolf, one must be human and show mercy.

CHAPTER XVII.

TOWARDS THE SOUTH! TOWARDS THE SOUTH!

MEANWHILE it had turned four o'clock in the morning of May 18. At this juncture, however, the clouds began suddenly to gather; we made breakfast with all speed, and a few minutes afterwards were on the way south.

But hardly had we begun to drive before a stiff head wind sprang up, with the addition later of thick weather. This added to our difficulties in all the rugged snow-bare ice. The wind swept the sledges along sideways, and the dogs could find no foothold. The odometer wheel was so knocked about that the spokes gave way one by one, and, in the end, the wreck had to be lashed to one of the loads. Then, too, there was so much pressure-ice under land that, to get clear of it, we had to drive north for a way, though, by doing so, we came into fairly level ice again.

We camped in the evening at Depotodden. The tent we pitched close under the high pressure-ridge, so as to be sheltered from the wind, and then set off to fetch the dog-food and over-runners, which we had left behind. Along the crack, and particularly round the pressure-ridge, were a number of bear-tracks; but the cache was untouched.

Next day we were weather-bound, and so set to work to mend the odometer. The broken spokes had to be replaced with line. The repairs were highly successful, and the wheel did excellent service for the rest of the journey.

May 20 rose clear and still. The sun was so hot as we drove southward that we stripped off garment after garment. But though the weather was fine, the going was remarkably bad. The German silver stuck as if it was riveted to the snow, although the

thermometer read as high as 21° to 23° Fahr. (−5° to −6 °Cent.), and the snow was melting here and there where it was a little discoloured.

In the morning, when we were preparing to start, we discovered that a big bear must have stood and looked at us from near the pressure-ridge, but had gone away again. The tracks had not been levelled by the wind, so that it must have been there latish in the morning, after the wind had gone down. It was strange that the dogs should not have noticed it, when it was only such a short distance away. On a ridge of sand, a little way up from the crack, a herd of polar cattle were sunning themselves.

We camped in the evening by a large pressure-ridge, which ran straight across the sound, and made use of the beautiful weather to take observations and bearings. Later in the night, however, the wind rose, and when we turned out in the morning a gale was blowing. We drove the five miles to Maiodden, but as we had to take bearings from there, we could not go further, and so waited for fine weather.

The dogs were well-nigh beside themselves with excitement, and tried to bolt ashore. At first I thought there must be a bear up by the crack, but when we had made sure that this was not the case, we supposed they had winded cattle inland. In such a snowstorm, however, it was quite impossible to see anything.

Next day the weather was sufficiently fine for us to be able to do our work at this point, and then we went on south, with a course for the western point of Storöen. The snow was so inordinately heavy that, although we pressed on with all the energy we were capable of, we did not make quite thirteen miles. We now saw what it was that had so exercised the dogs the day before; herd upon herd of polar cattle were grazing on the ridges round about.

We camped that evening on the ice some miles west of the north point of Storöen. The weather was beautiful, and we hoped we might be going to have a real spell of fine weather; but it was not a hope that lasted long. During the night the wind rose again; there was strong drift, and we were weather-bound the whole of the next day.

It was not till evening that the wind dropped sufficiently for us to go outside. One of the first things we saw was a herd of polar oxen grazing on a plain on the north-west side of the island. On the large plains west of us, that is to say, in Axel Heiberg Land, we also saw numbers of herds.

In the most lovely weather one could wish for, next day, we soon reached the point we were steering on; took some bearings in different directions, and then continued southward alongside the



DOWNHILL ON THE LOAD.

island. Others besides ourselves liked the sunshine, it appeared. Here and there sat small companies of hares, sunning themselves between the stones in the crack, while the ptarmigan walked about and pecked in the sparse vegetation, of moss and grass.

We stopped to take a meridian altitude, and while I was lying on the ground observing, Schei found a sheltered place between some rocks and lighted the 'Primus.' When he had set it going he went up the talus, armed with his geologist's weapons, and put it through a searching examination. I also had my hands full,



BAY AND HIS TEAM.



for I had to look after both the sun and the 'Primus,' so that neither should escape me.

When everything was well over, and we had put away a respectable quantity of chocolate and biscuits, we went on south, and in the evening turned into a sheltered bay at the south end of the island. Here there was much to be done; bearings and observations to be taken, angles to be set off, and the formation examined.

While we were engaged on our tasks, we saw many ruins of former structures. The Eskimo, it appeared, had lived snugly in this pretty little bay, which was so conveniently situated for their catches, and well sheltered from wind and weather. A network of intersecting bear-tracks was on the ice, up on land the hares were hopping among the stones, and from the ridges we heard the calling of the ptarmigan cocks.

We had a little feast that evening, for it was Whitsun Eve; but afterwards Schei had to go up to the high ground again, as he had found some fossils among the rocks which he absolutely must have. To sit alone in the tent on such a glorious Whitsun Eve I could not. One's thoughts are not always of the cheerfulest on such anniversaries, so I walked up to the ruins, and dug as if I meant to go through the crust of the earth, but of articles of native workmanship I found not one.

It was really dreadful the time Schei remained away that day. To cultivate science is very proper, but one may have enough of a good thing. Oh, there he was, far away, coming down the hillside; but with what a load! Gun, hammers, chisels, a brace of hares, and a wallet crammed full of stones! On with the coffee-kettle! It was Whitsun Eve, and his walk had been a long one.

On the other side of the sound a fjord cut into the land, in a north-westerly direction. This we must explore a little the next day.

On Whit Sunday morning, May 26, we accordingly drove into it. There was a southerly breeze, with snowfall, and the weather was so thick that we could hardly see each other. The fjord was narrow, with almost perpendicular cliffs. It looked as if it knew how to blow here. No snow was on the ice, except the little

which had fallen during the course of the day, and beneath it the ice was clear and shining. The dogs could hardly get a purchase on it; they scraped and clawed themselves along as best they could, but we went no pace that day.

We pitched the tent at a point about a mile from the head of the fjord. A large valley extended in a north-westerly direction between high wild mountains; another ran north-west, and, as far as we could see, led up towards the large plains due north. From both these valleys a large stretch of sand jutted out towards the fjord. We christened it 'Whitsunfjord' * on account of the day.

We made haste to put the camp to rights, cooked some food, and then went ashore on an excursion—that is to say, Schei did. I had my eye on a big seal which was lying on the ice, some way up the fjord, and meant to have it if possible. I equipped myself with a stalking-sail, and we walked together till we were abreast the seal, when Schei turned off up one of the valleys and I began the stalk. I took my time about it, as there was no reason for hurrying, and in the end came within capital range. The seal never moved from the spot.

But what sort of a seal it was I could not make out. It was so large that all the time I had thought it to be a bearded seal, but that it certainly was not. It looked like a harbour seal, but such a gigantic 'snadd' I had never seen before or since, and to this day I am not certain of what particular kind it was.

But, whatever it may have been, there was no doubt that it was a solid bit of dog-food! I put a rope-end through its snout, rolled up the stalking-sail, and started for camp. I did not get along as quickly as I expected, however. Although the snow was hard and there were long stretches of bright ice with only an inch of loose snow on them, it was as much as I could do to drag the seal along. Towing this craft back to camp was not exactly a Sabbath Day's work, but I got it there in time. Then I skinned it and crammed the dogs with the blubber and meat, and also saved a goodly portion for them to eat during the night.

I had hardly finished doing this when Schei came back. The

* So given by the author.

seal steaks were excellent at supper; it was many a day since we had had seal's-flesh in the frying-pan, and it is then that it tastes best.

Schei had found much in the mountains round about that it would be of interest to investigate further, and we decided to give up the following day to this work.

But such weather as we woke up to on Whit Monday! It was as much as we could do to stamp our way through the driving snow, and we could hardly open an eye, but, all the same, we struggled up to the heights on the west side of the fjord. There we dug among the rocks in some narrow valleys where there was a little shelter from the wind; but it was not the sort of weather to do much in, and I do not think it was with any very fat spoils that we came creeping slowly back to camp, about four in the afternoon.

Since the shooting of the seal, the dogs had lived like fighting-cocks on meat and blubber. Their muzzles had been taken off so that they could eat when they liked, and they had spent their time in a pre-eminently enjoyable manner. Notwithstanding that they had food in abundance, they had of course to gnaw themselves loose or else they would not have been happy. But they were now above biting through a single trace, and nothing satisfied them but to gnaw through the connecting lanyard. They had discovered that, this once parted, the whole pack was loose; or rather, I would say, that the devil himself was loose. One could never be certain what they would do next. As a rule, they lay down at once, secure in their freedom; but if they winded game there was every likelihood of an immediate stampede and subsequent absence for several days, and we had no time to waste on this sort of thing.

Towards early morning the wind dropped somewhat, and we got ready to make a start. While we were cooking breakfast, we heard two glaucous gulls screaming outside the tent. They are supposed to be a sign of spring, but the weather felt anything but spring-like. Their appearance, however, was not so very remarkable, for the glaucous gull is a hardy bird, and flies far afield. A thing more remarkable was that, while we were sitting inside the tent on Whit Monday evening, we heard the cackling of a flock of

geese flying up the fjord. Poor geese! They had taken a rash decision when they set out on their migration northward so early in the year. Many of them, doubtless, came bitterly to regret their recklessness, for, even though it was the twenty-sixth of May, there was nothing but snow to be seen, wheresoever one turned.

In the same thick weather the following day we drove out of the fjord, and took a line across to the east shore, where we saw a point which seemed to us the very place for observations. We camped on the ice a way out from it, but could do nothing for the fog.

As we had expected, the breeze increased to an unpleasant degree during the night, and we had to make up our minds to another weather-bound day. The gale from the south kept us in the tent nearly all day, and we only just managed to get out to feed the dogs. Towards evening it had almost blown itself out, and in the morning was not too bad for us to take some bearings before going on southwards. Later in the day it cleared.

In a slack breeze from the north we drove along the east side of the sound, and stopped for the night in a little bay on the south side of a rather steep promontory. The coast here began to trend slightly to the east, and this spit of land was just the place for taking bearings and measuring angles between the different fjord-openings and points.

I prepared to start on my work, while Schei went up the talus. He came running back directly, however, to say that he had seen a bear out in the sound, making straight for the camp. Not many seconds afterwards I also saw it, but when it had come within winding distance of us it resolutely turned tail and set off towards the west shore. We let it go, as we still had plenty of dog-food from our fat seal. Dogs require less food, too, when they get so much blubber, as it forms a substantial groundwork.

After that we walked northward together to the point, and climbed up on land till we had a good view across the ice. The bears had also discovered this point of vantage, for they had trodden quite a path up to it. It appeared, too, as if they well understood how to combine business with pleasure. A steep

snowdrift which led directly down to the fjord they had turned into a coasting-hill, and apparently used it assiduously. Probably the young folk amused themselves by cultivating the sport, while the more sedate and stiff-legged ladies and gentlemen kept a look-out and saw to the commissariat.

In about the true west was a broad fjord, which looked as if it penetrated north-west to a great distance. We decided to explore its inner part before we drove farther south. But here a great



RUINS OF AN ESKIMO HOUSE.

surprise awaited us: Schei recognized his camping-place of the previous year, away in Björnesund, to the west.

Had we been clearer about this fact on the way up, we might have spared ourselves much unnecessary work. We might have saved ourselves the journeys up Vandomfjord and Troldfjord, as, in any case, Baumann and Stolz were going to visit both these fjords. In place of this we might have concentrated our work on exploring the countries west and north of Greely Fjord. But it never could have occurred to us to plan the spring journeys otherwise than we did. We were *obliged* to look for the sound east of

Storfjord, for Isachsen, who had been in these parts the previous year, had distinctly said that 'Storfjord' was a fjord, and not a sound; but, as will be remembered from his report, he had very bad weather on this journey.

Well, there was nothing to be done now; it was no use being annoyed about a thing which could not be altered. We must be glad that we had been able to solve the question, sound or not a sound.

CHAPTER XVIII.

TO SKAAREFJORD.

WITH a southerly wind and clear atmosphere, we set out on the sound next day on our way up the fjord. The pace was pretty good, and on reaching the fjord we came on to hard snow, and had the wind behind us.

We camped that day at a little spit of land, whence we meant to take observations ; and Schei thought it would also be of interest to examine the country rather more closely.

When we had seen to the dogs we accordingly went together up on to the point, and at once came across a number of ruins from former habitation. We then walked on through a little valley, which the wind had swept almost bare of snow. We found quite abundant vegetation, saw some flights of sandpipers, and came on the tracks of numerous polar cattle.

Having so much to carry, we had taken with us only one gun, and, as usual when Schei and I were out together, Schei was the shot. After following the bottom of the valley for a time, we struck up the north side of it, but in order to ascend this, we had to climb a steep drift. I began to do this, but found it so hard and steep that it was almost impossible to get a foothold, and in the end I was reduced to cutting steps with my knife.

At last I reached the top, where I waited for Schei, who had found an easier way a little farther up the valley. As I was standing there, I heard something that sounded like a sneeze. Then again the same noise. There seemed to be a great deal of sneezing going on, and thinking it was Schei, I turned round towards him to see what could be the matter. But then I heard the same sound again, and this time so plainly that there was no

mistaking it. It was a polar ox which had winded Schei, and now came sniffing up towards him.

Schei, deep in his own reflections, was unsuspectingly scrambling and crawling down in the hollow below. I shouted to him to look out, as a big polar ox was stalking him, and he changed his course and climbed to where I was.

As we had no wish to shoot the ox, we tried to steal past it; but it was so choleric and determined to fight that we found it impossible to do this. It took up its position on a little edge, a little way above us, and began to sharpen its horns and work itself up into a towering rage. Schei at once took advantage of the occasion, and produced his camera. It is a pity that these animals never 'come out well' in a photograph; they really look like nothing but a patch of wool.

As we were the wiser party, and wished to avoid an embroilment, there was nothing for it but to go back the same way we had come and try an ascent farther down the valley; and in the end we managed to reach the knoll we had originally been making for unseen by the ox.

From this point we had a grand panoramic view over the beautiful fjord, with its countless bays and inlets. On its west side were three short bits of glacier falling abruptly down to the bottom of the valley, which continued inwards in the same direction for about seventeen miles, but after that turned rather more to the north. At the bend a large valley, encircled by high mountains, cut into the land to the west. A little south of the mouth of the valley a glacier snout protruded towards a big stretch of sands, and immediately north of the glacier, running straight up, we saw a very sharp and narrow valley.

Several icebergs inside the fjord, some of them fairly large, seemed to point to a largish glacier at the head of it. It proved later, however, that our surmise was incorrect.

In the same high wind, and on snow that was splendid going, we started next day up the fjord. We happened to pull up for a minute as we were driving across a big bay, where a largish iceberg was lying well anchored, and we then saw that a wolf was trotting after us. We overturned at once, before the dogs had

winded it, and I made ready to give it a suitable reception. But the fellow was suspicious; before he came within tolerable range he turned off towards land, and disappeared behind an iceberg.

I was not at all anxious for an outrunner of the kind, for with our light loads and on the slippery ice, I was afraid 'Greylegs' and the dogs would decide the course, and that we might find ourselves going in a direction that we did not want. I therefore ran in towards land as quickly as I could, so as to pass the iceberg and get within range of the wolf. But it was no use, the animal was too quick, and ran past me out of shot. When it had come on my lee side it sat down, and I thought I had better try a shot at it; at least I might arrive at frightening it away. I took as full a sight as I could, and held high, but the range was too long; I saw the snow fly up where the bullet struck the ground, a good way beyond the wolf. I then tried another shot, and this time it hit its mark, I could see, for the wolf sprang into the air, whirled round once or twice, and then ran towards the crack. But its pace soon grew slower, and as soon as it was on the ice-foot it sank down, and remained lying where it was. We let it alone, and continued on our way.

We camped in the evening at the head of the fjord, between high mountains on both sides, just outside a long stretch of sandy soil, which extended from the fjord a good way up inland, almost without an incline.

Here the storm had made a clean sweep of everything that could be swept. The snow had been blown away to the last flake. It was very evident that the wind could blow properly here when once it set down the fjord. We were both anxious to go a little way up the wide valley we saw in front of us, but as it was late in the day, and the wind had increased so much as to make the weather bitterly cold, we decided to stay where we were for the night, and explore the valley next day.

During the evening the south wind went down, and we had quite a comfortable night. But towards morning a breeze sprang up, and almost immediately afterwards a whole gale was blowing. It was a taste of what the weather could do in here, in the fjord. We had had a good many experiences of divers kinds on this journey,

but such squalls as these we had never felt the like of before. When the gusts of wind came it was as if the tent would be torn to ribbons, and we, with bag and baggage, be swept like shavings along the ice. The tent-poles bent like the bow of a violin, and before we knew what was happening, the tent was within an ace of being carried away over our heads. Schei had to stand and steady the poles, while I dragged on my boots and wind-repellers, and went out to brace up the guy-ropes.

As we had no wish to have the tent ripped to pieces, we decided to pack our things together and clear out of this storm-hole without delay. We would seek shelter in the big valley we had seen the day before. The act followed quickly on the thought: our things were very soon collected, the tent rolled up, the dogs put to, and we driving down the fjord in precipitate flight. The storm roared and bellowed behind us, and certainly did all it could to speed the parting guest. We sat on the loads, with the wind hard astern, and could feel how the whole sledge was lifted and carried along, until it literally ran away from the dogs. Many times the sledges fouled the traces, and swung round with their heads to the wind.

We got on pretty well as far as the point, but across the big bay, south of it, we came in for it in grim earnest. The wind was as terrific as ever, but was now hard abeam, and with such drift that we had to shut our eyes tight, and so could not see land on the other side. However, I knew that, by driving straight across the bay, we should hit off the big cañon, and so we went at it.

The sledges swayed from side to side, jump after jump, aslant across the ice; sometimes on one runner, sometimes on the other, sometimes on both. Time after time we overturned; it was futile to think of trying to hinder it. Once, when the sledge capsized, I was swept away with such force that I very nearly broke one of my legs. But we consoled ourselves by hoping that it was only a transition stage, as the fox said when he was skinned.

At last we made the sands on the other side of the bay, and as soon as we were there the wind went down sufficiently for us to see a glimpse of where we were going. The very instant that we turned up into the valley we ceased to feel the wind; not a

breath was stirring! We could see from the snow that it had not blown at all there that day.

We pitched our tent on a snow-bare mound of grit, dragged off our outer clothes, and hung them up to dry, for the sun had such power on the dark grit, that the snow melted at once on the sledges and baggage.

What a relief to be in the shelter of these high steep walls of rock! From our warm nest we could see how the storm on the fjord was still raging with unabated force. The transition was so sudden, that we felt as if we had come to Paradise—or home to Norway.

We cooked ourselves some lunch, and then went off, each taking his own line: Schei to the glacier, I to the north-east side of the valley, to take rounds of angles and bearings. After our return in the evening, just as we were about to take observations for longitude, the sky suddenly clouded over, and we had to postpone them till the following day. We took our revenge in the brilliant sunshine next morning.

After Schei had made some trial shots with his gun, the sights of which were out of order, we set off to drive down the fjord, in beautiful weather, and on snow in capital condition.

There were others besides ourselves out in the sunshine that day. We saw numbers of seal lying on the ice enjoying existence, but they took to the water as soon as we came near. Above us flew flight after flight of 'skaarer,' or young glaucous gulls; so many of them were there that we named the fjord 'Skaarefjord.' Two or three polar oxen browsing on some small bits of level ground quite near the ice-foot sorely tempted us to their destruction, but not beyond resistance. We could not stop for shooting to-day, and pushed on without a halt along the west shore.

Five or six miles from the mouth of the fjord a little fjord-arm made a sudden bend due south. We must find out for certain whether this was a sound or a bay, we thought. We rounded the point and set inwards, past a herd of polar cattle, which stood motionless and stared at us from a steep precipice as we drove past. After driving for three miles in rather loose snow we

discovered for certain that the fjord-arm was only a little rounded creek, and returned the way we had come. As we neared the point again we saw the same herd grazing on the slopes. This time they took no notice of us.

We stopped down by the ice-foot, and looked at them for a while in doubt whether we should kill one or two of them or not. But when we discovered that almost the whole herd consisted of cows with small calves, we left them in peace, and went on.

A little way farther out the snow became very bad going. It was so loose that the dogs floundered in it halfway up their flanks. And how the sun baked against the crags of rock around us! Its power in this basin was something incredible.

At last we could stand it no longer; the sledges would hardly move, and we decided to camp out by the crack. We did it, moreover, with a good conscience, for we had driven as many as twenty-nine miles that day.



THE MOST WESTERN PART OF BLAUFELD.



CHAPTER XIX.

BJÖRNESUND AND ULVEFJORD.

No sooner had we started next morning, than I noticed that my dogs winded animals every now and again, and when that was the case they pulled as if they had taken leave of their senses.

Not long afterwards I saw a she-bear and two cubs about half-way out in the sound. They were trotting southward, diagonally towards us. The wind was unsteady, so that the dogs only scented them now and then, but it was quite enough to animate them. The going became better and better, we made quick progress, and took a line for a point some way south in the sound.

The bears had discovered us too, and it appeared as if they wanted to cut us off from reaching this point, for they ran in that direction as fast as they could lay legs to the ground. The dogs soon saw them, and the pace, needless to say, did not grow less. They are curious animals, these dogs: if once they take a thing into their heads there is no getting it out again. Evidently they meant to be first at the point, and first they were. When I pulled up between some hummocks and overturned the load, the bears were still three hundred yards off, but perhaps our way had been a little shorter than theirs.

I then took my rifle in one hand and my whip in the other, and took my stand in front of the dogs to keep order. They saw the bears coming up towards us all the time, and could hardly keep in their skins. At first they were content with showing their teeth and snarling, but as the bears came nearer they became more and more excited, until that unmannerly scoundrel 'Svartflekken' began to yelp and make such a noise that all was up, and off went the whole twelve of them.

This frightened the bears, and they stopped short. They were near enough for me to have shot one of them if I had not been so taken up with keeping the dogs in check. But before I was ready to fire, the bears were making off as fast as they could go, and I did not care to send a shot after them. Most probably I should have fired wide, or possibly only have wounded one of them.

We then went on to Björnesund, where we took a meridian altitude, and from there to 'Ulvefjord' (Wolf Fjord), where we drove southward along the island of 'Ulvingen.'

We had not been driving very long in Ulvefjord before the dogs winded another bear, and started off, still southwards, at full speed. The bear was coming across the bay, on the west side of the low narrow neck or pass which extends across the island of Ulvingen. The snow became looser the farther south we went, and although the dogs hauled with all their might we did not go very fast.

No sooner had the bear set eyes on us than it decided to attack. It came stealing up northwards straight towards us. I got out my rifle, for this time it seemed as if I should have a chance of using it. But when the 'white 'un' had come within two or three hundred yards, it was suddenly seized with panic, and took to its legs with a course on the point south of the bay.

I cut 'Svartflekken' loose in the hope that he might be able to keep the bear until we drove up with my five dogs. But 'Bamsen' had a long start, and, moreover, was fleet of foot; the snow, too, was heavy for the dogs, so that 'Svartflekken' did not catch the bear up before it had reached the crack near the point.

Here the fun began. It was the fiercest, and, I think, the quickest bear I have ever seen. 'Svartflekken' was in full vigour now, it appeared, and certainly he had need to be, for the bear made such fierce and rapid attacks that time after time I thought the dog was done for. But every time the bear threw itself round to break away, 'Svartflekken' clung on to its hind-quarters. Thus they went on all the while we were driving south, and when we reached the crack they had arrived a couple of hundred yards up on shore. The bear had taken its stand on a snow-bare ridge of land close by the low banks of a river, and there

'Svartflekken' behaved splendidly, for he no longer had to plunge in loose snow far up his sides.

I then let go my other five, and things began to be lively in earnest. Snaps and tugs at 'Bamsen's' coat from all sides, and blows and snarls in answer. But the bear was hard pressed; it sat itself down on the bank on its haunches, with its back to the river, and sparred at the dogs. I then sent a bullet into the thick of them, which brought the game to a sudden end. The bear fell backwards over the bank, and the last I saw of it was its hind-legs in the air. I then took the dogs back to the sledge, and drove it up to the battle-field, along with Schei, whose team had not been able to keep up.

We camped up on the sand-ridge, and began on the skinning and feeding. The fallen animal was a she-bear in its prime, and fairly fat. This time we were not done out of our black pudding; we had it for supper, and delicious it was. We cut off a large lump of the excellent tender meat, so that we should have something from which to cut and come again, and gave the dogs sufficient to keep them eating all night if they liked.

No sooner had we turned in than a wind got up, and it was soon blowing hard from the south-west; but in the morning it had dropped again, and there was warm sunshine.

With the course on Hyperitodden we drove across Ulvefjord in loose, heavy going—drifted snow of the most deceptive kind. At one minute it would bear, at the next let the dogs through, and there they would lie swimming, unable to move from the spot. And the sun! Towards midday it was about as much as we could stand. We stripped off garment after garment, and still we could hardly bear it. We grew so desperately lazy at last that we made up our minds to have a good noonday rest. The dogs would enjoy this, too; for all the feeding at the last camp had made them unwilling to work. We had such a good supply of oil that we were not obliged to economize it in cooking, so we lighted the 'Primus' and made ourselves a goodly portion of chocolate.

The going was variable as we drove on along the west shore towards Hyperitodden. There we fell in with some pressed-up ice, but found a passable way through it along by the crack.

As I was driving along amidst the pressure-ice, deep in my own thoughts, I was suddenly electrified by the sight of a gigantic tent up on the ice-foot, above the pressure-ridges. It was a pointed tent of the shape we used the first year. What in the name of wonder could it be? The erection was black and dirty, and positively uncanny looking. I could see the opening of the door; the flagstaff was in its place and the flag up



BAY WITH HIS BUCHSFLINTE.

—a dirty, draggled rag of heavy material. The inmates needed a high tent, it appeared, and I wondered what race of people they could belong to. Whence came they, and what were they doing here? Travellers they could hardly be; therefore they must be natives. I have never seen the hut of a troll, but I imagine it to look just like this.

Such were the thoughts that flashed through my mind, but I soon had something else to think about. My dogs were seized with a perfect panic of fear. They were not easily frightened on

ordinary occasions, nor had I ever remarked that they were superstitious; but this time they pricked up their ears, gave short, uneasy barks, and were absolutely determined to strike off across the ice, and get away from this unedifying neighbourhood. Schei's dog 'Mosaiken,' who, as off dog in the file, was nearest to the monster, could hardly be induced to go on. When we were abreast the mysterious structure, the dog pressed as close in as he could to the sledge, and as soon as we had the hut on our beam, he, like the others, started off with the load as if he were fleeing from the crack of doom, all the while uttering short barks and looking up apprehensively at the ice-foot.

And what was this terrifying object? Comparatively soon we discovered that it was merely a weird formation of the ice; the most extraordinary thing about it, and what well-nigh made *me* shudder, being an arrangement on the roof in the shape of a long lance of ice, with a flag drooping from it. It was so natural that it almost made one's hair stand on end. The whole thing was black with dirt, but most black and most diabolical of all was the door, which ran up in a point, and was formed by a deep groove or grotto. It looked as if a troll might come rushing forth from it at any moment to see who were the strangers who were thus roving amid the ice up here.

There were the tracks of many bears along the shore, but this was not to be wondered at, seeing that they had a regular high-road just here. We particularly noticed the tracks of an enormous bear, which had gone west, at most only a few hours before ourselves.

We camped out on the southernmost point, where Schei and Peder had had their camping-place the previous year. We found many vestiges of the past on this point, in the shape of tent-rings and meat-cellars. Two or three reindeer had come from the west, and gone ashore here.

Next day we drove up 'Gletcherfjord' (Glacier Fjord). A chain of mountains which fell sheer away on the west side of Ulvefjord sloped evenly down towards Gletcherfjord, like a monster 'ski'-hill. On the east side of Gletcherfjord were extensive lowlands, which continued very far north. Outside these

lowlands ran long stretches of sandy soil, along which we drove from point to point northward. In the inner part of the fjord



Archæopteris fissilis Schmallh., FOSSILIZED FERN FROM THE DEVONIAN.
GAASEFJORD. $\frac{1}{3}$ Natural size.

protuded glaciers, which appeared to fall into the sea, and Schei wished to examine them.

We saw the first flock of geese of this trip on one of the

points. They were sitting up on the ridge of some sands, and did not appear to be at all enjoying themselves. There were a few dark snow-bare patches on the sand here and there, but not a trace



FOSSILIZED BIVALVES IN LIMESTONE FROM THE CARBONIFEROUS.

STORE BJÖRNEKAP. $\frac{1}{2}$ Natural size.

of vegetation or other food for the geese. They must have been leading a wretched existence, poor things.

We shot one of them; then went on up the fjord, and stopped

at noon at one of the higher points to take an observation and see a little more of the land.

The going was inordinately heavy, and seemed as if it would grow worse the farther we went inwards. We had already taken some photographs of the fjord and its surroundings, and we now came to the conclusion that the time would be better spent in examining the glaciers in King Oscar Land than in ploughing on here. It had always been our intention to drive up one of the fjords south of Store Bjørnekap and penetrate into the land, to the 'inland ice,' and it was now so late in the season that mild weather might be expected at any time.

We therefore decided to turn back, and, later in the afternoon, drove down the fjord again. But soon a violent wind sprang up, and we therefore drove ashore a couple of miles north of our old camping-place out on Hyperitodden, after which we made for a river-valley we had seen earlier in the day, and where we hoped to find shelter. It was blowing so hard that it was no use to attempt to pitch the tent except in a sheltered spot.

While we were turning into this valley we had the wind dead against us for a time, and this made things about as unpleasant as they could be. It was impossible to get the dogs up against it, particularly when the worst hailstorms fell on us. Even when I was able to urge my dogs to make head against it for a little way, Schei's team would bear straight off without a pretence at following. After endless trouble we at last got them into the valley, and then found it was blowing just as hard there as it had been outside!

We trudged round for a good while looking for a dry and sheltered place for the tent; and after a time the wind went down, when a dry camping-ground was not so difficult to find. As it became pretty fine later in the evening we decided to stay where we were, so that Schei could go an excursion inwards on the level country, and I to climb Hyperitodden and take bearings and rounds of angles between the different fjords and points.

My work on the hilltop next day in the sharp breeze from the north was not of the pleasantest; but I did what I wanted to do, and so could not complain. Schei was home by supper-time,

and among other things brought back some hares. After supper we went a walk together. Almost the whole of the plain north-westward was covered with vegetation, especially in the hollows, and was evidently good ground for big game and ptarmigan. I brought a brace of the latter back to camp.

We took observations both evening and morning, and then in brilliant weather broke our last camp in Axel Heiberg Land, and laid the course for the northern part of Björnekaplandet.* But we were hardly clear of Hyperitodden before a strong wind from the north sprang up. Ulvefjord and Heureka Sound were smoking. On the whole, however, the going was good, and we made rapid progress.

Later on, as we were jolting along on our way, we suddenly saw a bear luffing up towards us, but no sooner did it wind us than it disappeared in a hurry.

* The custom is common in Norway of naming a district after its most prominent feature by adding to the name the word 'landet.' This, in such cases, means not so much 'land' as the 'country round' the place in question.

CHAPTER XX.

A STONY LAND.

WE camped in the evening without realizing how near we were to land. Next morning we came across the crack after driving only five or six miles, and we then discovered that between the mountains and the sea lay a very low fore-land, and that having entered a bay, which extended a short five miles inland, the fore-land was here at its narrowest.

We continued our way up the level country, but made a halt at a little valley with a river in it, where it was my intention to go quickly up a height to take bearings and set off angles, while Schei waited below with the dogs; we meant to go on again as soon as I came back.

I had a splendid view from the top of this hill. To the south the lowlands stretched away like an immense snow desert, with here and there an oasis of bare land. In many places it was quite impossible to decide where the sea and the land met. In others I could see the land jutting out into the sea in points; and the more north-westerly of these I put down at eleven or twelve miles in length.

We did not leave this place so quickly, after all, for I saw a great number of fossils up on the mountain; in fact, the whole hill seemed to consist of them. I showed Schei some samples of my find, and he said they were very valuable, as they contained several species which we had not come across before.

We soon agreed to give up the rest of the day to collecting fossils, so after putting the camp to rights and hastily cooking ourselves some food, we started upwards with a full mineralogist's equipment of hammer, chisels, stone-bags, and the like. We took

all the fossils we could possibly carry, and, well satisfied with our work, started downwards once more.

But as we neared camp we heard the cackling of one flock of geese after another, flying northward along the lowlands. This was more than we could resist, and we had to go after them. But they were shy game, these geese, and knew well how to keep us at arm's length. There were hosts of them, too, flock after flock of several hundred birds; but that was small comfort, seeing that we never could get within range of them. There was no question of stalking them here where the country was as flat as a floor, and when we were unable to come within fair range we generally missed them. I shot so wild at these bedevilled geese that day, that I was almost beside myself with annoyance. I killed one by a fluke now and again, and a couple of times brought down two at a shot. It was some sort of consolation to know that Schei was having a day of misfortune too, as far as the birds were concerned.

Schei's idea of the stalking-sail led to no greater success. It answered splendidly as far as approaching the geese was concerned, but the wind was so high, that it was as much as we could do to hold the sail in place, and to aim with the thing shaking and tugging at one was a sheer impossibility. There was nothing for it but to roll up the sail and put it away.

Well, enough of this wild-geese chase. We soon grew tired of it, and began instead to take a lively interest as to how the geese would look in the cooking-pot. We had shot a few, so that at any rate we could get a supper out of them. We managed with one goose apiece, for they were as fat as they could be, and the goose-greese floated on the top of the soup in a thick layer. We thought it was many a long day since we had eaten anything so delicious.

On Monday, June 10, we broke camp at the usual hour, drove south across the great lowlands, and meant in time to get down on to the sea-ice, in the neighbourhood of Lille Björnekap. Mile after mile we drove across the plain. On every bare patch was vegetation, giving me the decided impression that the whole of this lowland was closely covered with herbage. No wonder it was a favourite haunt of the big game.

Later in the day we saw two browsing reindeer away on the plain, but how we were to come within range of them in such flat country, without cover of any kind, we knew not. The only depressions in the ground were the river-beds, which were shallow, and at this time of the year almost filled with snow.

All the same we decided to try our luck. I stayed where I was, until I saw Schei disappear with both the teams into the bed of a river farther south, and then I walked straight up to the reindeer, which began to move slowly away. I saw they were manœuvring to get on to my lee-side, and so wind me; and I, of course, manœuvred to frustrate them, while at the same time I continued to approach nearer. They were not exactly frightened, but exceedingly inquisitive.

When I saw they would come no nearer I hazarded a shot. The range was long, and I missed. A second shot, and I hit the animal, but had to give it another, and this kept it lying where it was. I ran up to it with all speed. It was a cow reindeer with a last year's calf. The last two times I had taken a full sight and aimed at the higher parts of the animal, but the shots had struck both the fore-legs. Meanwhile the calf ran round us in a zig-zag, though always at a good distance away.

Just as I was standing wondering what I should do about it an old acquaintance appeared in sight, away on the plain. It was 'Svartflekken,' the rascal, who had heard the shots, broken his trace, and now came tearing along till he was almost flat to the ground. It is all up now, I thought to myself, 'Svartflekken' and the calf will both be off together, and there will be no seeing him again for the next three days.

When the calf caught sight of the dog it made straight for him. But no sooner did 'Svartflekken' see the lanky, long-legged apparition rushing towards him than he was seized with panic. He stopped short, and up flew a spray of snow; then wheeled round and dashed back at the same mad pace.

I brought down my gun and laughed till I ached. 'Svartflekken' frightened of a year-old slip of a reindeer-calf! And in all conscience too! He never stopped till he was safe among his friends in the midst of the team! It was not till then that he summoned

courage to look back at the monster. Once, and once only, did I see 'Svartflekken' afraid of another animal, and that was when he measured ground with the reindeer-calf.

The calf had soon to bite the dust. Schei drove up the two sledges, and the skinning was begun on and soon finished. The dogs had a good feed off the meat, and the remainder we took with us.

The animals were in very poor condition; there was not a particle of fat on their bodies, and not very much meat. The skin was the poorest I have ever seen on a reindeer; we could hardly touch it, and had to handle it with more care than if we were skinning a hare. They were certainly fine specimens of their kind!

At last we went on southwards, and pitched our tent that evening down on the ice-foot. We fared sumptuously off fillets of reindeer and goose, for we had become so high and mighty by this time that we fried pieces off the breasts of the geese, and boiled the rest for soup.

As we were driving on south next day, along the ice-foot, we fell on to the tracks of two sledges, and so knew that Fosheim and the mate had gone south. We passed countless small lanes, though they were not so broad that we could not drive across them; one of them, however, sent us up on to the ice-foot. Numbers of seals were lying on the ice, sunning themselves in the brilliant weather, but we had no time to think about them to-day; we forged on south to Store Björnekap as hard as we could go. This was the goal we had set ourselves for the day's march, as we were anxious to see a little more of it. There we meant to be before we camped that day, and there we came, but it was a long way; we had never thought it would take so long to reach it.

It was a relief to camp on the dry shingle, and what was still better was that when we looked a little more closely at this shingle it proved to consist mainly of fossils. This promised well, and we could not resist walking up to the precipitous cliffs. The shore was here a couple of hundred yards wide, and at its upper part was strewn with large fragments of rock, almost all of which

consisted entirely of fossils. We were in the thick of it here, it appeared, and we looked forward to the morrow, and to examining this field of riches.

Later in the day the sky clouded over, and we had snow and sleet. The weather became really rough at last, the seals went down one after the other, and by the time our tent was up not one was left on the ice.

Next morning we turned out at our usual hour, and prepared to



NEAR THE END OF THE CHASE.

begin on the fossils. There was choice and to spare, with such vast riches as were here; almost every rock was full of well-preserved remains. We took some of the finest, and began to break them up. I collected the fragments, broke them into pieces of suitable size, and carried them to Schei, who did the fine hacking. This was an exceedingly difficult business, and numbers of them split and were spoiled. But one is not particular about a sausage at killing time, and we were rich in stones that day.



Schlei.

Sveinstrup.

SUMMER CAMP AT KOBBERGUTTEN, 1901.

Stoltz.



We kept at it the whole day, until late in the evening, while snow and sleet vied with each other in making the work pleasant for us, but by that time we had a splendid collection, and did not think we could take more with us. Schei was busy packing them till far into the night. Everything we possessed, over-socks, clothes, wool, stockings and the like, was pressed into the cause as packing material. The fossils, I am sure, had not had such a soft warm bed to lie on for as long as they could remember.

CHAPTER XXI.

FUGLEFJORD.

NEXT day we drove inwards up Eidsfjord, as Schei wished to examine it, and we had also to fetch the box of dog-food we had left behind there. The snow was terrible going. There had been a heavy fall in the night, and the fresh snow was so loose and sticky that it was quite impossible to use our 'ski.' The snow balled underneath them in a long, large lump, though the German silver, on the other hand, ran pretty freely. We ploughed on inwards, nevertheless, and late in the day camped on the high river bank where the box was lying. The camping-place was not first-rate; wherever we turned there was nothing but clay; but we had to take things as they came, there was no choice.

Schei brought the boulders to the hammer, and was up among them the whole day long. Shortly before his return in the evening it began to snow hard, and next day the weather was so rough that we thought it wisest to remain where we were. What a sight was outside the tent door! The whole camping-ground was a gruel of clay and slush, for the weather was so mild that the snow melted on the bank.

Next day we made but poor progress at first, though the snow improved little by little as we went outwards along Eidsfjord. We decided to drive up 'Fuglefjord' (Bird Fjord), whence we hoped to be able to reach the glaciers overland; and we camped on bare shingle on a low isthmus, between the mainland and the peninsula protruding southwards towards 'Fugleöen' (Bird Island). We were not the first who had fancied the isthmus as a camping-place; there were several old tent-rings there.

As soon as the camp was in order, Schei went a short excursion

inland, while I tried to get a seal, which, however, very shortly saved its skin by taking to the water. I soon went back to camp, and set to work to fry reindeer steaks, which was far pleasanter work than being fooled by a seal.

We drove up Fuglefjord next day in falling snow and thick weather, unable to see anything, but we eventually camped on an almost snow-bare delta of sand at the head of the fjord. The bed of the river was the only place where there was still any ice or snow; there we had a little ice under us for part of the way. We drove first on one side and then on the other, but were soon stopped by stones and grit. We had got into a horrible hole. There was nothing but slush wherever we turned, and not a dry spot for the tent. In the end we had to take refuge on a heap of stones, for the first time in all our wanderings. We cleared some of the stones away, and the ground was not so bad as might have been expected, though it could not be called extra soft lying.

The weather had cleared by degrees, and when we went up on to the mountains to look round us we had a good view up our valley. We soon came to the conclusion, however, that at this time of year it would be impossible to reach the 'inland ice,' which as a matter of fact must be rather far away, for we saw no sign of it whatsoever.

But though we saw no 'inland ice' we saw enough birds; there were countless hosts of skuas. Wherever we looked we saw skua by skua up on the ledges of the cliffs. I had never seen this bird in such numbers. There were also a great many geese here. We could not resist trying for some, though it was curious how hard they were to shoot that year, and many a shot whistled wide into the blue air. But then I made a lucky shot and brought down three at one rifle-shot. I took them as they were forming into line, in the way these birds fly. One of them flapped on a few strokes farther, but soon fell down.

The day afterwards we left the fjord, but in the narrow strait at its outer part, a little way inside Fugleöen, we met open water, and had to make our way in to the ice-foot.

Rich as the fjord had been in geese and skuas, the big lane

was by no means amiss. In it were myriads of eider-duck, long-tailed duck, and gulls of divers kinds; though the eiders formed the majority. There was such a splashing and flapping, mewling and screaming, that one could hardly hear the sound of one's own voice. It was not without ground that we christened it 'Bird Fjord.'

Outside the fjord the snow was better going, and we made rapid progress. The seal lay strewn in long rows along the ice, particularly at the edges of the lanes, and the dogs pulled as if they were crazy, for in the slack south-west breeze they could wind first one seal and then another, all the way we went. The bears had been here too, wandering about between the seals.

That day happened a thing which had never occurred before: the dogs all but caught a seal alive. It was lying peacefully by the side of a lead, but down in a hollow, so that we did not see it until we were close on to it. The seal lifted its head and glared at us; the dogs made for it forthwith, and before the seal had time to collect itself, were close to it. As bad luck would have it, however, the animal was lying on the opposite side of the lead, so that a little time passed before the dogs had jumped across, and this it was which saved the seal. Had it been lying on the same side, I am very sure it would soon have been done to death. It was quite a small harbour seal, and the dogs would undoubtedly have prevented it from taking to the water.

They looked rather taken aback when they saw it dive under, and then hung over the edge and stared down after it as if they expected it to come up again. They were hardly to be moved from the spot; but when we set off again, and they scented a new seal, their sorrow was healed.

The seals seemed to be in a very casual frame of mind that day; they seldom took to the water before the last moment. It was not till we had stopped the dogs, and they began their yelping, that the animals grew frightened. We managed to shoot a harbour seal from the sledge during the course of the day, without stalking it, but this was confessedly a fluke. When we went up to fetch the animal we had shot, we found another seal, quite a little fellow, lying dead down by the same hole.

In the autumn, when the young ice forms, the seals have at first a number of holes, but by degrees they abandon the ones which are most exposed to the frost, keeping only those which are protected amid the pressure-ice and where the snow is most easily dammed up. When the seal goes up and down through the opening, the snow near the hole is partly rubbed away by the animal's movements, and partly melted by the warmth of its body, so that little by little a protecting grotto is formed round the hole. In these vaults, which are often situated very many feet beneath the surface of the snow, the seal lives during the winter without ever coming up.

The polar bear is well aware of these conditions, and I have often seen great holes which have been dug by it in the snow alongside the hummocks—in all likelihood where it had smelt a seal—and there probably it had lain in wait to get itself a mouthful for Christmas.

How it was that the little seal had lost its life out on the ice was not easy to say. It had not been molested in any way, and we imagined it must have been from the freezing of the hole; that it had neither strength enough to break through the ice nor to push its way through the wall of snow to the neighbouring hole. There it had lain and succumbed to the long cold winter night. Then came the spring, the sun broke down the wall of snow between the two openings, and we found the poor thing lying dead by the edge of the open hole.

We went on south-westwards, and thought of pitching our tent in the evening a little east of a big reach of sand. There was an immense quantity of snow lying over everything, and though it was June 17, it was still full winter. We had never before seen the country so evenly covered with snow; there was hardly a dark spot visible on the land south of us. We had to look long and well before we discovered a sand-ridge on which to pitch the tent.

Next day, June 18, we drove along the ice-foot to the northern point of the sands, and thought of striking diagonally across the bay to the place where we used to start across country to the 'Fram.' But when we had come to about the middle of the bay,

we saw a number of dark spots out on the ice, which we took to be seals. There were seals about in all directions, and I did not think anything more of the matter.

The ice was in a terrible state. On it lay a thick sheet of snow, and the dogs toiled and tugged, with their tongues hanging out of their mouths. There was something curious, too, about the snow; it looked exactly as if there were water underneath it—and water there really was, more and more of it, too. At last we seemed to be driving in nothing but slush; the sledges sank into it to their



A FALLEN GIANT.

beds; and I now discovered that the black specks were not seals lying on the ice, but eider-ducks swimming in the water! I turned in a little towards land, but then noticed that the snow we were driving on began to crinkle up in a most remarkable manner, as if there were movement in it, and then suddenly it dawned upon me that the ice was gone in many places, and that we were surrounded by slush, which was bubbling up and down in the tearing current! In truth a pleasing discovery.

Here had we been within an ace of going to the bottom with all our precious fossils, and I hardly know now how it was we escaped with our lives. We crept inwards towards land, and all

the time the slush rippled by the side of us. It was an ugly bit of driving we had until we got hold of some old ice farther up the bay. We followed this at first, and after that the ice-foot, until we struck across country.

We had never before seen such a quantity of snow on the neck of land, and we drove on the German silver all the way across it, without so much as scraping on a single stone. We were on board again by evening. Nor did the winter seem inclined to retire from Gaasefjord either. There was hardly the sign of a thaw to be seen, and, if I remember rightly, June 17 was the first day when the thermometer on board was above freezing point.

Baumann and Stolz had come back on May 28, Isachsen and Hassel on June 6, and Fosheim and the mate on June 13.

CHAPTER XXII.

A SURVEYOR'S LIFE, AND SHOOTING.

BAUMANN and Stolz started northward on April 26 to map the tracts east of Norskebugten, and about Baumann Fjord. On May 1 they met a herd of polar oxen, the encounter with which Baumann describes as follows:—

‘It was the spring of 1901, May 1. We were two together on a sledge-journey for the purpose of mapping some of the fjords on the west side of King Oscar Land. It was nearly four in the afternoon, and, as we had driven some twenty-five miles in the course of the day, I thought that was enough, but as we were in rather good game country, I first drove up on to the ridge of a hill and had a good look round with the glasses. On a bare ridge, about two miles away, I saw two reindeer, and farther away, perhaps as far again, but in about the same direction, were four polar oxen. On seeing this we at once drove down into the hollow of a valley and made out the plan of campaign. Put shortly, it was as follows:—

‘First of all I was to try and stalk the reindeer; but, as the ground was exceedingly open, there was little probability of my coming within range. We therefore agreed that I should proceed by way of the ridge of a hill, and fire off a signal shot if the reindeer made off; my companion was then to take with him the three best hunting dogs, namely, “Gulen,” “Moses,” and “Silla,” and join me, and we would then start together for the oxen. My companion had never before been polar-ox shooting.

‘Matters went as I expected: the reindeer made off long before I was within range. I fired a shot from the top of the hill, and heard from the dogs that my signal had been observed,

so then I plodded up to the place where I had last seen the oxen. A while afterwards I saw my companion with the dogs, and went a little slower, so that he might catch me up ; but I need not have done this, as he had not gone far before he came to the conclusion it was not good enough, and returned to camp. The dogs were some distance in front of me, and somewhat to the right. I could see they had winded game, but I did not think very much of it, as there were countless fresh polar-ox tracks in all directions. The country was now rather more broken, and by this I knew it could not be long before I reached the place where I had seen the animals. I therefore kept a sharp look-out forward, but there was not a living thing to be seen except the dogs, which were about a good half-mile away from me. Just by chance I happened at this time to look to one side, to the left, and there, in a hollow of the valley, saw—not, indeed the four or five oxen I was after, but a whole herd of something like thirty animals.

‘To make the situation clear, I give a sketch of the country on the next page.

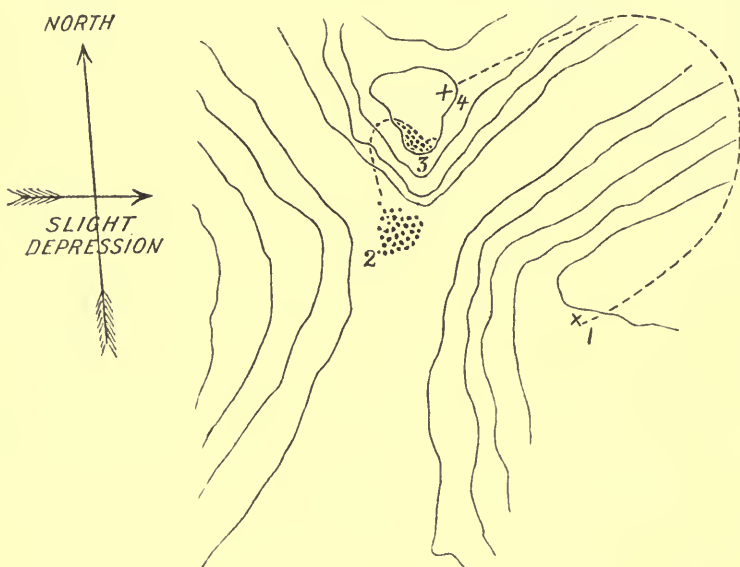
‘Point 1 shows where I was when I caught sight of the herd. Point 2 the herd, which was lying down.

‘My companion could not have gone very far back by this, so I fired a shot to attract his attention. The report was not loud, and did not reverberate as it would between mountains, but it was loud enough to bring the animals to their feet. This was tiresome, but it was more tiresome that my companion did not seem to have heard the shot, for I saw nothing of him.

‘It would cost least time and trouble, I thought, to go straight at the herd and shoot an animal ; possibly I should then get the dogs back, and perhaps the other animals would go off if they were left alone. No sooner thought than started on ; but I had not gone far before the whole herd turned round and ran, one after the other, slantwise up the side of the hill, and took their stand at point 3. Here they had a good position of defence, but as the land behind them rose still higher, in small terraces, I could not be certain they would remain where they were. I thought I had better try to cut them off from ascending this hill, and so went round to point 4, according to the dotted line. As I

crossed the bed of the stream I called the dogs, and caught a glimpse of them—enough to see that they were on the right track. I therefore went confidently on, hoping that the dogs would soon get full scent of the animals and make straight for them. I reached the plateau unnoticed, and saw that the oxen were still making front towards the direction where they had last seen me.

‘There was not a vestige of cover, so I thought I might just as well go straight on, and I had come to well within a hundred yards of the animals, when they suddenly became aware of me. Everything now followed so rapidly that I had hardly time to



realize what was going on, and I need hardly say that it all went a great deal more quickly than it takes to tell.

‘As aforesaid, the animals suddenly became aware of me, and at the same moment wheeled right round and headed straight for me at full gallop. So close on each other were their horns that they seemed to form a single, unbroken, white line. The animals sunk their heads till they almost touched the ground, the steam stood out from their nostrils, and they snorted, blew, and puffed like a steam-engine trying to set a too heavy train in motion.

‘A glance backward at once told me that there was no question

of retreat; for that I was too far forward on the plateau, and should be overtaken long before I reached halfway to the cliff. There was nothing for it but to try and make a stand; to be carried with them would bring certain destruction. Up came my carbine, a report, a trembling of the ranks, and an animal fell; the others at once closed up, and so far from the attack diminishing in force and fury, it seemed rather to increase. To continue shooting and trying to defend myself with the carbine would have been downright madness. I had only two shots left; and one need not have had much to do with polar oxen to know that one must be exceptionally lucky to bring two animals to the ground with two shots when the herd is advancing at full gallop. And even were I lucky enough to bring off two such master shots, it would hardly affect the herd to any appreciable extent. Well, there was no time for prayer or reflection; if this was to be the end, then, in Heaven's name, let me rush into it instead of standing still, for by doing this I should, without doubt, only be carried with the oxen. I would not give much for what is left of a person when a herd of these animals has done with him. No, either there should be an end at once, or the polar oxen should let me through; so, with a horrible yell, and waving my arms all I knew, I charged the line. This manifestly did some good, for, as I came nearer, I saw the rank open, and I ran straight through it. The nearest animals were certainly not a yard from me. I was thus saved from the first shock, but I was still up on the plateau, and this was no abiding place for me. No; better make my way back to the cliff, and try to get across the bed of the stream again. But before I had time to think which was the shortest way, I had the whole herd, which had wheeled round, in line coming towards me again. I had succeeded in impressing them once, so I supposed I could do it again, and, with my former war-cry, I once more charged the line. As before, the ranks opened, and I slipped through unscathed. In the rush of it all I had managed to make out that the shortest way to the cliff was the way I was going, and I continued to run on.

‘Again the oxen wheeled round; this time, however, they did not come in line, but in herds of five or six, and, what was worse,

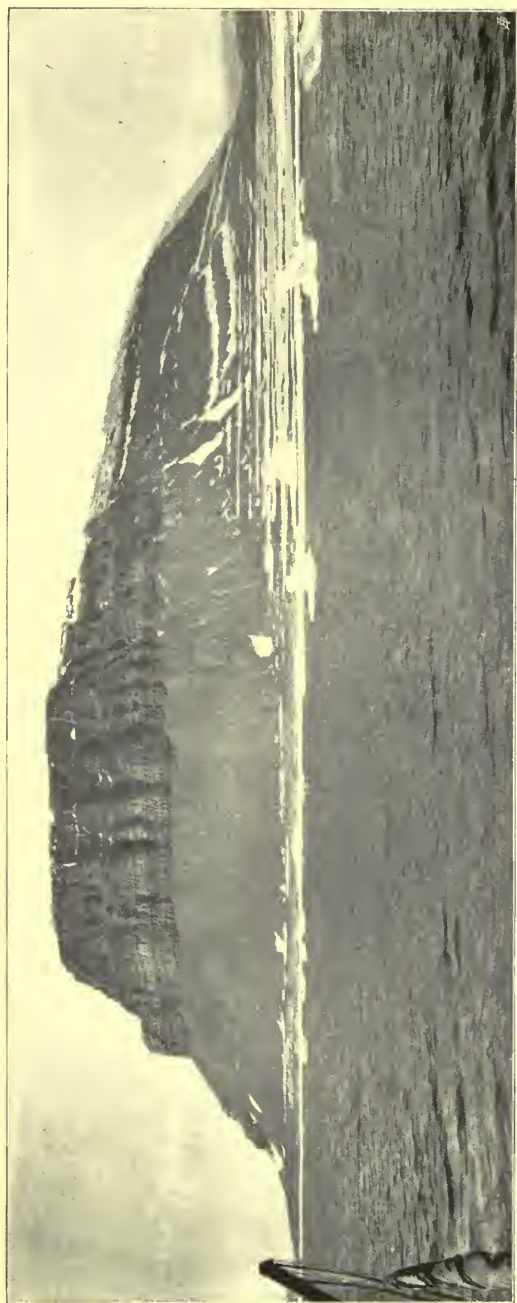
they now appeared as if they meant to attack from different sides. I suddenly realized that, once surrounded by these small herds, I was undone. I exerted myself to the utmost, and ran as hard as I could ; but nearer and nearer came the herds, and I thought I was already cut off, when help came from a quarter whence I had long expected it. Up the cliff-side came "Moses," tearing like the wind, and rushed straight on to the nearest herd. Over he went, poor dog, and I heard a plaintive yelp ; but order was broken, and the herd dispersed. I thought, of course, that there was an



SEVENTEENTH OF MAY, 1901, IN CAÑON FJORD.

end of "Moses," but he emerged from the *mêlée* whole and unhurt, and went for the next herd. Now came "Gulen" and "Silla," and, Heaven be praised, not together, but a little way from each other, and each attacked a herd.

' In this manner I gained sufficient breathing time to reach the cliff, where I was in comparative safety, so I stopped and turned round to see how the dogs were faring. The herds swept on, crossing and recrossing one another, blowing and tearing up the earth with their horns. Now and then I heard a plaintive howl from one or other of the dogs ; it was simply a miracle that they were not spitted at once on one of the many horns which were



VENDOMKAP (CAPE TURN-BACK).



ready to rip them up. I called the dogs, but none of them heard me. I had no mind to venture out on to the plateau again, so I crossed over the bed of the stream, and began to call the dogs once more. But it was fruitless; my voice was drowned by the tumult of battle on the other side.

‘Had I had ammunition enough, I could, of course, have tried to shoot down the herd at long range, but in these latitudes it is downright malevolent, if not criminal, to shoot anything but what one is obliged to shoot, or what one can make use of. Wolves, foxes, and stoats, however, I except from this rule; bears, on the other hand, are so important as food for one’s dogs that they ought to be allowed to go scot free if one has no use for them, or if one cannot take back the skin on board.

‘I had nothing more to do here for the time being, and so might just as well go back to the tent. On the way down a fog came on, and I lost my way, but luckily fell on to our tracks on the way up, and followed them back to the tent, where I arrived at eleven o’clock at night. Tired, wrought up, and cross, I crept straight into the bag.

‘The day afterwards we drove up with the rest of the dogs. There were still nine oxen there, and before them lay “Gulen” on guard, while “Moses” and “Silla” were some way off eating at the animal I had shot the day before.

‘The instant we reached the plateau the remaining animals began the same antics as the day before, and if we were to feed the dogs, there was nothing for it but to shoot down the whole herd. But they never gave in, and, to the very last animal, rushed round attacking the dogs until they fell.’

On May 3 Baumann and Stolz camped at the mouth of the fjord, south of Depot Point, and remained there for a day, as Baumann had an attack of snow-blindness; and at their next camp, at Depot Point, they were kept by stress of weather until May 9.

On that date they reached the head of the eastern fjord, where they stayed the whole of the following day, as its surroundings were of great geological interest. They discovered there thick

layers of coal, partly covered with the fossilized trunks of trees, more than a yard in diameter. The arm of the fjord was given the name of 'Stenkulfjord,' or 'Coal Fjord.'

From here they followed the north side of Baumann Fjord back again. They had bad weather on May 15, and were detained in consequence; they waited on a little island farther west, and next day shot a bear which they had followed for nearly seven miles. Its paws on the upper side were dark grey, almost black, in colour.

Late in the day, on May 17, they took a line from the point south of Troldfjord, across to Bjørnekaplandet, which they reached in the evening, afterwards following the east side. On May 20 they shot two polar oxen, of which they skeletonized one. On May 25 they were on board again.

Besides the animals already mentioned they shot two wolves and a she-bear with two cubs, and they saw several wolves and a herd of three reindeer.

CHAPTER XXIII.

FOSHEIM'S ACCOUNT.

SATURDAY morning, May 4, at half-past six, the mate and I left the Captain's party. We had now been together for twenty-five days, searching eagerly for the mysterious sound which now at last lay large and open before us like a broad high-road, leading onward to unknown lands as yet untrodden by a white man's foot. There is always a strange fascination in travelling in virgin land, and it was therefore with great pleasure that we set to work to solve the following problem which the Captain set us in a pleasant farewell palaver in our tent the evening beforehand.

It was as follows. We were to go north to Greely Fjord, follow this eastward, and find out whether a fjord or sound cut into the land in a southerly direction. If this were the case, we should then arrive at Bay Fjord, which we were to follow outwards, to the islands in Heureka Sound, then map its eastern side to the mouth, and then return home again, either by way of Nordeidet or along the west side of Bjørnekaplandet, whichever we ourselves thought best. If there were no sound between Greely Fjord and Bay Fjord, we were in such case to return the way we had come, and should then be at Maiodden on May 20. The Captain was rather afraid that the ice near the islands and at the mouth of the sound might break up early.

Pleasant as it is for a time to be altogether one's own master, and set to work at one's own task, it cannot be denied that we threw rather a wistful glance after our travelling companions, as we saw them and their dogs vanish from sight amid the pressure-ice. But there was no time for idle reflections; we got under way as quickly as possible, and set the course north-east, to the land south of Greely Fjord.

I had Hendriksen's team on this trip; they were very good draught animals, but as they had not been much driven in file I had a good deal of trouble with them the first few days. By degrees, however, they went very well, and as hunting dogs they were equal to our very best. From this honourable mention, however, the late 'Sussaberet' must be excepted; she never interested herself in the least in the actual hunting, but so much the more in the edible results afterwards. Then 'Beret' took her full share, looked sourly about for more, and stole from the others if she saw her opportunity.

We passed at midday, at about lat. 80° N., a smallish fjord running inward in an easterly direction, with lowlands in the background, and four miles north of this, which later was called 'Slidrefjord,' we camped outside a narrow river-valley. While I was measuring angles the mate went a trip ashore after hares. No other animals apparently could find food in this barren place. After some time I suddenly heard the sound of a shot from the heights above, and after that another one, and then shot upon shot. A tremendous firing seemed to be going on. Once there was a short pause, but then the shots began afresh, and were even worse than before. He must have put up some ptarmigan, I supposed, or come across a flock of hares, since the bombardment seemed never-ending. Then, at last, I saw the mate coming running down, so fast that the snow flew up around him: 'Bring the big cooking-pot and your gun, and come!' he shouted. I understood now that he had been shooting bigger game than ptarmigan or hares, and hurried up to the scene of battle with my gun in one hand and the big camp-kettle in the other. Under the crest of the hill, on the north side of the hollow, lay a polar ox in the snow, though not yet quite dead. The mate had no more cartridges left, so I had to help it over into another world. But this was easier said than done, for the animal seemed to be almost immortal, or at any rate provided with at least nine lives. It was not till I had shot it three times in the head, at very close range, that it finally ceased to breathe. How many shots the mate had already expended on it is another story.

It was a large old bull, in exceedingly poor condition, almost

all skin and bone, and with a large swelling at the root of the tail. The meat was therefore almost as hard to eat as the animal had been to kill, and it was so pale and unappetizing in appearance, that we left it altogether for the dogs; but we felt very much inclined to try the heart, liver, and tongue, and some of the blood for a black pudding—a dish we were both very fond of. We hesitated a good deal, however, before we made up our minds to it. Supposing the animal was suffering from an infectious disease? Perhaps the blood was pure unadulterated poison? Why not first try its effect on one of the dogs—say the 'Tiger,' who had forfeited his wicked life over and over again? In the end, however, we gathered courage, and made a huge black pudding, which both tasted good and agreed with us exceedingly well.

On his way up the mate had gone along the ridge of a hill down which ran a stream, but had not noticed anything of the bull. But as he came down again, along the middle of the valley, he heard a peculiar sound like somebody snoring. He stopped, astonished, and to his great amazement saw a polar ox close by him lying with outstretched head and legs, fast asleep. The hunter's blood began at once to boil, and without more ado he woke it up with a bullet in the body.

On May 6 we drove round 'Isfjeldodden' (Iceberg Point), whose northernmost extremity lies on about lat. 80° 20' N., and rises gradually for a distance of nearly fourteen miles towards the highlands in the south, but everywhere it seemed to be deserted and barren, with sparse vegetation and little game. The only signs of life were the tracks of wolves, of a bear, and of a few ptarmigan. Greely Fjord stretched to the north-east large and broad, on the north side skirted by lofty mountains, and sometimes with abrupt snow-bare precipices. To the south a long arm of the sea penetrated deeply into the land. Was it a fjord or a sound? This question we were about to solve, and we were very much excited as to the result.

The last couple of days we had been driving on snow which for gliding qualities was about as good as blue clay, and it often reminded me of the terrible travelling the previous year on the west coast of Axel Heiberg Land. Furthermore, our loads were

still very heavy, for we dared not leave anything behind, as we could not count on returning the same way. But up the fjord the snow became better, and we then made very fair daily marches, when bad pressure-ice did not put too great obstacles in our way.

Of the ice in these parts my diary gives the following details. The whole of the sea round the great promontory, as far as the eye could reach, was covered with rubble ice of this year, with spaces between filled with large rugged floes of old ice, and of a mass of icebergs, large and small, which lay strewn about in all directions. The greatest number of these were from the western extremity of the point to four or five miles south of it. Here they stood like gigantic Runic stones, ten or fifteen of them in a line, a mighty fence shutting off the ice outside. All these giants were evidently grounded. The tidal crack here was four or five feet.

May 7.—To-day at four we were awakened by short barks from 'Susamel,' afterwards seconded by the other dogs, which were tied up just outside the tent. Creeping on all-fours, I poked my head out, and saw by following the direction of the dogs' glances that there was a herd of polar oxen on a hill straight up ashore, about six hundred yards from the crack. I set off forthwith, gun in hand, while the mate was to loose the dogs at a given signal. Just before I came within tolerable range of the animals I had to cross some absolutely open country, and the consequence of this was that the whole herd made off up the hillside, on the crest of which they pulled up and formed into square. I dropped an old bull with a bullet in the head at sixty or seventy yards, whereupon the others all set off again up the ridge, the snow spinning up into the air behind them, and their long hair flapping like cloaks in the wind. After I had dropped the second animal I meant to stop, for with two of them we had more than enough meat for our present wants, but unluckily it proved that a third animal had been so badly wounded that I was constrained to give it another bullet.

During this battle both the game and the shooter of it had disappeared across the ridge, so that the mate could not watch the



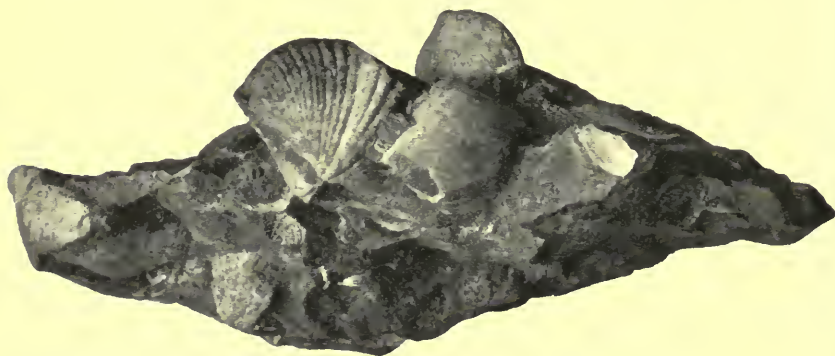
FROM CAÑON FJORD.

course of the struggle and its conclusion. I had run off without snow-goggles, and as my eyes felt rather queer, I went back to the ridge and shouted to him to bring them. The distance was long, and he did not hear what I said, and supposing I wanted the dogs, he immediately loosed them. Wild with excitement at the shots, all twelve set off and dashed like black strokes up the slope; they sniffed a little at the fallen animals, and then on after the fugitives, which by this time were quite out of sight. We soon heard they had brought the oxen to bay far away in on the wastes; but by the time we had finished the skinning and cutting up they had all come back, with the exception of 'Ingebrigt' and 'Gammel'n.' These two kept things going till twelve o'clock; we heard their baying, intermittent and indistinct, right down at the tent—that is to say, eight consecutive hours. This was well done; but to this day I am puzzled to know how it was that just these two dogs should have been equal to such a feat.

'Kari,' poor dog, had a bad time during these days. As we were driving up through Heureka Sound in twenty-two degrees below zero and a keen wind she dropped one puppy after another. But we had no time to stop for that—on the contrary, we were driving twenty-three miles a day, full speed, and with heavy loads. It is hard to have little ones in such circumstances. But 'Kari' never gave in. She was in harness the whole day long, and hauled like a hero; but she lost her appetite, that she did, and became very thin. In addition to the rest, she ended by being ill in other ways, and would then hardly eat anything at all. The mate was quite unhappy about his dear 'Kari.' When, after an ended chase, the other dogs helped themselves to their hearts' content, and ate till they could hold no more, 'Kari' lay still and moped, and left her ration of delicious meat untouched. One raw and bitter day, ill and miserable as she was, she felt the cold very much. But 'Kari' was not only a good dog, but a wise one, and therefore 'Kari' knew what to do. She curled herself round in a ball and lay down close by one of her comrades, between his legs, where she would be sheltered as well as warm. This, however, was not at all to the mind of the dog in question, and he was ungallant enough to get up and change his place. But 'Kari'

was equal even to this difficult situation. She took her allowance, went up to the dog, and put it down before his nose, as much as to say: 'Here, this is for you, now do be kind, and let me lie quiet!' Then she licked his face in a coaxing way, and curled herself round again in her old place. This time she was really allowed to remain in peace.

May 10.—Our camp is now on the west side of the fjord, right under a steep headland which the mate has named 'Cape With.' It is a very imposing and proud mountain, about two thousand feet in height, and nearly three miles long, with a serrated crest, and steep cliffs sheer to the sea. Behind this, in a south-westerly



Spirifer sp. and *Rhynchonella* sp., FOSSILIZED SHELLS IN SHALE FROM THE DEVONIAN. GAASEFJORD. Natural size.

direction, rises a wild Alpine landscape, with high peaks and deep breaches. From Cape Lockwood on the east side of Isfjeldodden to this spot, the land is rather low, but from Cape With and southwards, on both sides of the fjord, there is high mountainous country, with a few large valleys in between. Right in front of us lies East Cape, which forms a sharp division between the low country northward and the mountainous country to the south. A few miles south of this point a largish glacier runs straight into the sea. It is about six miles wide, and rises at an even gradient eastward as far as one can see. This is the first glacier we have seen in here, but I hardly think it can have produced all the icebergs which are lying about in the fjord, among which some are of large size. Probably many are from the glaciers in Greely Fjord.

There are animals without end in this country. Every day we pass herd after herd of polar oxen, but as we do not require them we let them pasture on in peace. The mate, who is a provident caterer and looks far ahead, has said nothing yet about more meat being wanted; and as long as he says nothing I can feel safe, for a slack and baggy meat-sack is a positive annoyance to him. It would be a poor look-out indeed if we had an empty larder here, where there is such abundant opportunity of filling it at will.

The fjord from here runs south-east and south, and as far as we can see at present there is some likelihood of a sound. In any case, we cannot give in until the question is quite cleared up.

May 13.—As we were ploughing along to-day in heavy going we suddenly saw some blades of grass sticking up through the snow just in front of us. What in the world could this mean? There was flat ice in every direction. We began to kick and dig, and we very soon got down to bare sand. Without noticing the change of surface we had driven a good way in across a large stretch of sandy soil, as flat and even as the floor of a room. Here, then, was the head of the fjord, and therewith a sudden end of all our hopes of a sound which would have saved us a round of more than a hundred and fifty miles. But even a westerly passage across country to Heureka Sound would be a very considerable short-cut. We therefore determined to make a serious attempt in that direction from a broad valley running north-west, called later 'Ulvedalen' (Wolf Valley), of glorious memory!

Here we camped next day under the lee of a big iceberg, where, however, we found but little shelter from the violent wind. It came down in gusts, first from one side and then from another, and shook and rattled at the tent with such force that we were afraid the whole thing would come down or be torn to bits. Added to this the weather was foggy and dark, and the mist drifted like carded wool up the valley. But we had to make the most of our time, and went a reconnaissance notwithstanding.

All the way up the valley was a very vigorous vegetation of grass and small creeping willow; some of the latter measured, near

the roots, as much as an inch in diameter. There would be no difficulty about firewood here, to all appearance. There were tracks and traces of polar oxen in all directions, but the weather was too bad for any living animals to be seen. Once there was a rift in the sea of fog, and I then thought I saw a valley running west, which gave promise of advance in that direction. But there was neither time, nor was it weather that evening to make further investigation of this important question, and I therefore went back to the tent. The wind had now increased to a whole gale, and when I had come so far that I could see a glimpse of the camping-ground through the scud and drift, I perceived, to my surprise, a figure running to and fro about it. This was my thoughtful and resolute travelling-companion, who was occupied making a solid wall of ice and snow round the tent, as a protection against the violent gusts of wind which came rushing round the corner of the iceberg, noisily seizing hold of the flap of the roof, so that it gave short snapping reports like gun-shots.

Next morning we both went off on a fresh reconnaissance. On reaching the top of a hill, the mate—called also, by the Captain, ‘Falcon-eye’—saw two polar oxen on a plain on the other side of the valley. The dogs would be the better for a good feed again now, so we determined to shoot one of them. After making a long round, so as to get up wind, I approached them under cover of some sand-hills. The last three or four hundred yards, however, the ground was so flat that I had sometimes to crawl on all fours, sometimes to writhe along like a snake. When the oxen lifted their heads, I lay as still as a mouse; when they began to graze again, I crawled forward as stealthily as a cat, and at last came within pretty fair range. The first animal shot, the other would not go off with a good grace, so I had to let it share the fate of its fallen companion. As luck would have it, I had only a few cartridges with me, in the magazine of my gun, and these came to an end before the animal was quite dead. It lay down, got up again when we approached, went a few steps, and then fell again. The mate, who would hardly ever shoot, had left his gun at the tent. However, I thought the animal would soon die. But when we came up again next day the ox was nowhere to

be seen. Most likely it had been found by a pack of wolves, which had feasted sumptuously on their windfall.

Both that day and the next we saw many small herds of polar oxen, of two, three, or four animals in each; of heifers or calves we saw nothing, and it is therefore probable that all these unattached animals, so to speak, were males, which vegetate in bachelor fashion during the spring and summer, until the beginning of the pairing season in August or September.

On our march we came to the cliffs of a narrow little side valley, and there suddenly found our way barred by a large ox, which looked anything but a pleasant customer. It pawed the ground with its fore-legs like a vicious bull, tore up the sand with its enormous horns, and altogether looked so ready to fight that we thought it wisest not to force a passage, armed only, as we were, with flaying-knives and a rifle without cartridges. I have never been attacked by a polar ox, but this solitary, cross-grained cavalier looked very doubtful, and was evidently not to be trifled with.

Up all the steep slopes and knolls were numbers of hares. When the weather was still and fine, certain places simply swarmed with them. One hare was so tame that it almost let me stroke its coat. How pretty it was as it lay there, round as a ball, and white as the snow! At last it slowly got up, laid one ear back and pointed the other erect, stretched itself lazily first with one hind-pad and then with the other, and straightened its nose in the air, as if it was going to yawn. Puss was evidently tired after her night revels. Then came a rushing stone and made an unkind end of this Paradisaic idyl. She started a couple of hops aside, scraped away the snow with her fore-pads, and began to browse anew. The next night hares were sitting and lying and running on all the slopes and hills.

After examining the valley for a distance of seven miles from the sea, we decided to try a passage from here. The country looked as if it would do pretty well; the floor of the valley was even and covered with snow, the incline gentle, and the direction right enough—if only it did not make a turn farther west.

The first part of the way was easy beyond all expectation; for, after no more than two hours' driving, we covered the five

miles up to the ox we had shot. Here the dogs were allowed to eat as much meat as they could by any means get down, and then they had a good rest; in the evening we drove on up the valley. The weather now was beginning to be so far fine that we found it better for ourselves and for the dogs to drive at night, and to lie quiet during the day. In the valley running west we also made good progress at first, but by degrees it became narrower and narrower, the snow looser and looser, and so heavy that we had frequently to lend a hand at the sledges, and even then it often happened that we could hardly move them from the spot. However, this was a state of things which might improve later on; what was worse was that the valley seemed to take a different, and, as far as we were concerned, a quite wrong direction. We climbed a high neighbouring hill, from whose conical top we had a splendid view in all directions. The valley here branched off into two arms: a small one to the north-west, and a larger one to the true south; but westward, where we wanted to go, the way was mercilessly closed.

The pale beams of the midnight sun lit up here a landscape whose beauty fascinated both mind and senses. Cold and unapproachable, the mountains towered three thousand to four thousand feet in the air; but, proud as they were, and beautiful as was the whole panorama lying before us, bathed in this wonderful light, which has something of the magic of moonshine, there was no time in which to linger and look at them. No choice was left to us. We had to turn back, however unwillingly, and again take to the waterway, after driving nearly twelve miles up through the country.

Towards morning, as we were nearing our old camping-place down on the ice, a pack of eight wolves came running towards us. At first they seemed as if they meant mischief, but before they had come within gunshot, they thought better of it, and went off in open order towards the mountains.

May 17.—To-day, splendid, beautiful weather; mild and calm, with sparkling sunshine. We meant to have a feast and do things well, for of meat and drink we had plenty, and the day was ours, since we drove during the night. After placing the

Norwegian flag over the door outside, and ourselves in our usual comfortable position with the bag for a mattress, 'privates' and wolf-skin coats by way of cushions, and the 'Primus' singing cheerfully between us, we felt a well-being which in the civilized world one hardly knows the like of. Nor did we spare the ingredients of the different courses that day, however stingy we may have been on other ones. It cut our good caterer to the heart to see so much butter sacrificed to the *clou* of the entertainment in the culinary line, a really delicious egg-powder 'dænge.' Of strong waters we had saved so much that we had enough in which to drink a 'skaal' for the Seventeenth of May, and 'gamle Norge.'

This feast was all very well, but the best was still to come. Over and above the programme was an 'extra,' which, more than anything else, served to make the day memorable.

Just as we were sitting over our after-dinner tea, the dogs suddenly set up their well-known melody, which never failed to announce big game. I ran out of the tent, and sure enough there were two wolves away towards land, about two hundred yards from the camp. My gun, as always, was lying ready, with cartridges in the magazine, and it was only the matter of a moment to seize it, aim, and fire. Yes, there it fell, on the ice! The other one made off, and ran fifty yards away, but then turned round to look for its companion and see what all the fuss was about. Its curiosity cost it dear; for by that time I was ready for another shot, and when I fired this one fell too, hit just behind the shoulder. The whole thing was the matter of a moment, and the mate's 'Bravo!' was an audible expression of the satisfaction we both felt at this lucky duplicate of wolves. They were two she-wolves in very much better condition than beasts of prey usually are, with the exception of bears. The fat really looked so white and good, that we felt inclined to taste it, and if we did that, we thought we might as well try the hearts at the same time. Although most people will consider this a dish more extraordinary than appetizing, I think prejudice plays a large part here; we, at any rate, found it far better than we expected.

We were not detained by surveying work on the way back,

until we came to 'Vesle fjord,' or 'Little Fjord,' ten or eleven miles north of Bay Fjord. Moreover, we now knew the way, and, as a rule, had good snow for driving on, so that we made daily marches of eighteen to twenty-three miles. We saw a number of polar oxen on our way up the fjord, and on the low country north of Cape With counted as many as fifty head of game. As we were going straight up wind the dogs were able to enjoy the

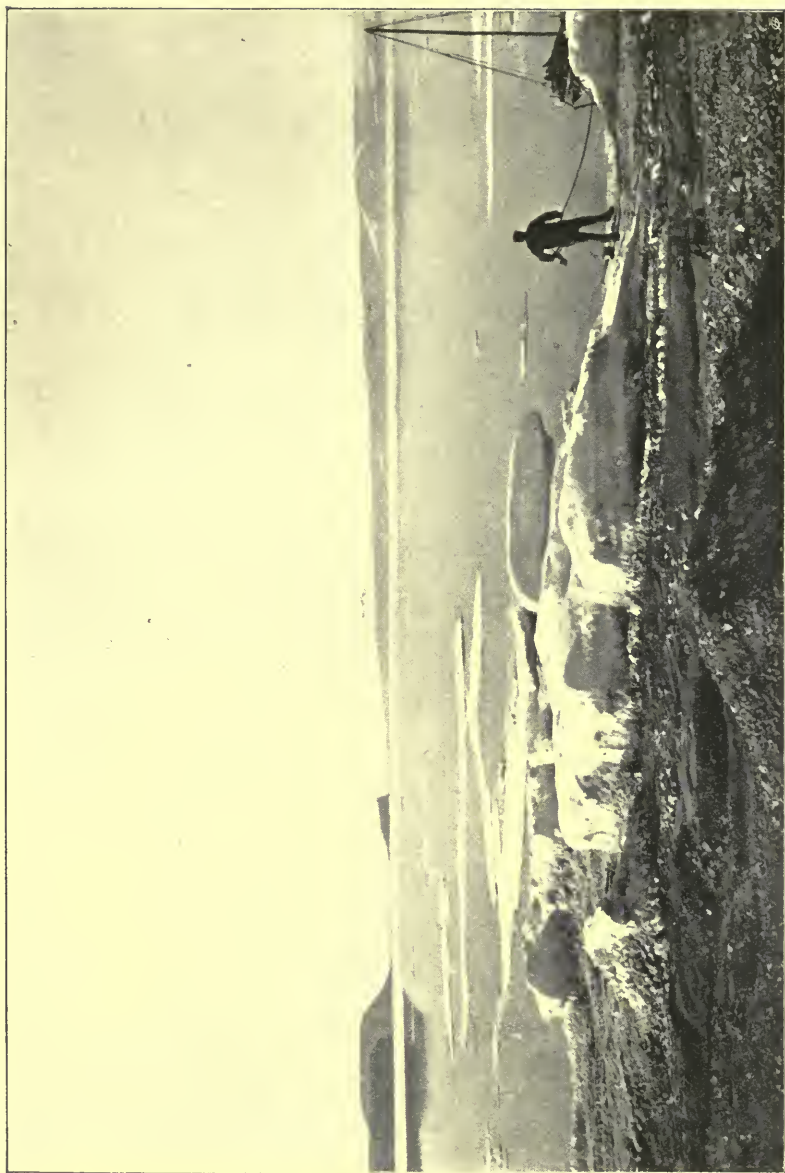


SPRING LANDSCAPE.

scent to the full, and ran mile after mile as if they were possessed.

The night of May 19 we shot two old oxen which were by themselves down by the shore, and took meat enough off them for three days' dog-food: the way home was long, and it was therefore best to save the patent food as much as possible.

At Isfjeldodden we had a short visit from two wolves, which both got away unhurt, but not so a third, which we met a couple of days later, farther south in the sound. Just as we had stopped to camp on the west shore, and the mate had gone off to find a sheltered place for the tent, away by an iceberg, I suddenly caught



SUMMER IN JONES SOUND, 1901.

sight of a wolf, which was standing glaring at us some seventy or eighty yards distant. Happily the dogs had not yet seen it, or they would have set off in pursuit. I quickly overturned the two sledges, dragged my gun out of its case, and dropped the wolf. But Sir Urian got up again, and limped off on three legs inwards towards land, accompanied by 'Turisten,' who had broken loose and followed it side by side, though far too much afraid to risk an attack. I kept back my second shot on account of the dog, but at last the wolf fell, and this time not to rise again. There was a red stripe of blood along on the snow after it. It was a full-grown he-wolf, old and thin, and with flesh so tough and malodorous, that even the dogs took their allowances with an air of disgust. Two of them struck altogether: they would rather go without than eat anything so loathsome.

There must be plenty of wolves in these tracts, for again the next day we saw a pack of five, which came running across the sound. We tried by forced driving to cut them off from landing, but soon thought we had better give up this fruitless pursuit, although we were itching to get hold of them, for on wolves, without exception, we had sworn war to the knife.

We now struck diagonally across to the east side of Heureka Sound, and arrived at Veslefjord on Whit-Sunday morning. It bears with right its humble name, for so small is it that the next night we drove up to the end of it and out again by the southern headland. It was fourteen miles long and four or five wide at the mouth, but narrowed by degrees to about a mile and a half towards the head, where there was an island or peninsula, which of the two we could not see for certain on account of the thick fog. To the east the land was open and rather low, while in other directions the fjord was surrounded by steep, sometimes rather high, mountains.

Southwards alongside the land to Bay Fjord we had unusually heavy going; the snow fell close and even in deep layers, the sledge and 'ski' ran badly, and our progress was but little in consequence; in many places, too, our way lay through very nasty pressure-ice. Nor were the dogs in spirits that day, which was not to be wondered at, for they underwent a good deal, and

literally swam in the bottomless snow. They were under the weather, perhaps, for it was dull and damp. In the end we reached a large boat-shaped iceberg at 'Nordodden' (North Point), whence it had been agreed we were to shape the course eastward and explore the collection of fjords which the Captain and Bay, and also Isachsen and Braskerud, had seen from Ellesmere Land in the summer of 1899. Later in the day the fog began to lift, a fresh breeze sprang up and cleared the air, and we soon had beautiful sunshine, so that I was able to take observations, bearings, and some photographs of the country.

On the morning of May 29 we were camping on the north side of the fjord, and after much consideration we decided not to go any farther east. The reasons for this were as follows:—

'1. Exploration to the inner extremity of Cañonfjord has proved for certain that Bay Fjord, the head of which lies on about our present latitude, does not issue out anywhere in these parts, nor south of this point. The prolongation of the fjord must therefore be here; it is hardly possible to think of any other alternative. The situation of the head of the fjord is determined, its outer parts the same, and we therefore do not think it imperative to make a detailed exploration of the intervening part.

'2. The season is so far advanced that we hardly dare risk travelling farther inwards. It is a long way to the "Fram," and, added to this, the ice at the mouth of the sound may break up early. I may mention in this connection that we saw an ivory gull yesterday, the first this year, and we took this to be a sign of open water, if not near at hand, at any rate at no great distance.'

The following day I climbed the top of the highest of the three islands, which have been named 'Grethas Öer' (Gretha Islands), and our assumption in regard to the outlet of Bay Fjord was still further strengthened. Judging by the sinking of the mountains, the fjord first ran northward for a short distance, and then in an easterly direction towards a large chain of mountains with snow-covered land in the background.

Notwithstanding that it was still full winter, with the thermometer at 14° Fahr. (-10° Cent.), I saw on the island, on May 30, a flight of six sandpipers about the size of a thrush. It

was curious to come across these little pioneer birds of passage, up here in the midst of the snow- and ice-fields of the polar regions, where there was not a bare patch other than those made by wind and storms. A couple of days later we saw a large flock of Brent geese, which were cackling cheerfully as they flew northward up the sound. In spite of snow and cold their enjoyment at being on the wing was evident, even though their journey was to a land where there was not yet so much as a thawed patch, or a puddle big enough for a goose to put its beak into.

According to our instructions, we continued our work of surveying southward along the east side of the sound. South of the of the islands the land was rather low, but afterwards it merged into a wild mountain country, which continued on towards Baumann Fjord. 'It is ugly here,' said the mate, and in his way he was right. Sheer up from the sea rose perpendicular walls of rock to a height of two thousand feet, with steep ledges, sharp crests, and jagged peaks. Of valleys or shore there was hardly a trace, and apparently but scanty vegetation. All this long distance we never saw a polar ox, though almost daily we made war against the bears. Before we arrived at Norskebugten we had shot four, of which one was a little cub of this year. Its flesh tasted very much like young pork. Although I always find a bear-hunt interesting and exciting, I will only describe one which seems to me a particularly typical example of the Eskimo dogs' ferocity and courage.

Just after we had passed a perfectly fresh bear-track, the mate shouted forward: 'Bear in towards land!' I got out my gun in a hurry, and swung the team inwards, telling them to go for it, and the dogs knew at once what that meant. Off they went like wild-fire! At first the bear ran straight towards us, but then stopped at some hundred yards' distance, uncertain what sort of beings we were. Manifestly it had its doubts; it faced about, and then made off till the snow flew. I loosed the connecting lanyard, and the dogs darted off in hot pursuit of poor 'Bamsen'—it was a young bear—who now, doubtless, bitterly regretted his untimely curiosity. In the wild race which followed the bear was soon worsted, and the dogs clung on to him like horse-flies, tearing, biting, and

struggling. Suddenly he fell down under them in the snow ; then got up again and started off with the dogs after him once more, biting him in the legs till they fetched blood, and for the second time the bear rolled over on the ice. It was lying there, with the dogs keeping it down, when I arrived on the scene, and I am quite sure they would soon have made very short work of the wretched animal if they had been left to their own devices. The poor thing was really a sight to be pitied as it lay there struggling and kicking



DRIFT-ICE, OUTSIDE HVALROSEFJORD.

to shake off and escape from its blood-thirsty tormentors. To shoot in such circumstances was quite impossible, for, although I almost placed the barrel of my gun on the animal's body, I risked sending a dog over into the eternal hunting-grounds. There was nothing for it but to help the fellow on to his legs again, in order to get a free shot. After sundry kicks and pokes with the butt end of my gun, I at last drove the dogs sufficiently off the unfortunate bear for it to rise and take flight—to fall a moment afterwards with a bullet in the neck.

The day afterwards I lost 'Bismarck,' one of my strongest dogs. I cannot, I regret, eulogize him by saying that he fell on the field of honour, as he simply ate himself to death. 'Bismarck' was a confirmed quarreller, and as stubborn as he could be. To thrash him was as useless as throwing water on a goose. Five minutes after a good round with the whip he was as cheerful as ever, ready for a fresh onslaught.

From the mouth of Heureka Sound we set straight across the entrance to Baumann Fjord, which was twenty miles broad, reaching Björnekaplandet on June 1. Almost all the way along its west coast was a low shore consisting for long distances of sands, from which Lille Björnekap stood up like an isolated cone. The vegetation was vigorous, the animal life rich, and the land a real Eldorado for sport; one of the very best larders of the west coast. Here we shot polar oxen and reindeer, and were visited at the tent by a pack of wolves, which very nearly had us in a tight corner. In on the flat sandy ground there was nothing to which we could secure the dogs, and the only thing we could do was to thrust our 'ski' into a snowdrift and tie the dogs up to them. At sight of the wolves the dogs broke loose, and off went both teams hotfoot after them.

This was a pretty state of affairs! There was no saying when we should see the runaways again.

But happily chance came to our aid, this time in the shape of an old polar ox, which was feeding alone in a narrow gully; as soon as the dogs discovered it, they gave up the wolves and turned their attention to the ox. Like a good general, it had taken up a position of defence, with its back against a steep cliff, and made furious sallies at its eleven attackers. The ox was defending itself splendidly, and was evidently the master of the situation until we arrived on the scene and mixed ourselves up in the quarrel. Before it died, however, it gave 'Turisten' such a bad wound in the side, that a piece of a rib and an intestine stuck out of the gash. But it was an easy matter for the mate to put this to rights. When we came to the tent he cut away the piece of bone, replaced the intestine, and sewed the wound together with yellow book-binder's thread. In a week's time 'Turisten' was himself again.

From Björnekap we shaped the course direct for home, and came on board on June 13. We had then been out sixty-seven days, and had driven altogether 962 miles, at the rate of $14\frac{1}{3}$ miles a day.

We had remaining at least a fourth part of our provisions.

CHAPTER XXIV.

ISACHSEN AND HASSEL'S JOURNEY, SPRING, 1901.

ON April 8, Easter Monday, all the sledge-parties drove northward together through Gaasedalen to Storsjöen. From there Isachsen and Hassel followed the Nordstrand river, and went down on to the sea-ice with a course for the northern extremity of Graham Island. Their loads were light, and they made quick progress, the greater part of the dog-food for the trip having been deposited at Cape South-West in the month of March. Graham Island, however, hid itself so well in the mist that they did not see a glimpse of it.

On April 13 they reached Cape South-West, and discovered that the depot had already been inspected. The cached dog-food had been dug out, and the sacks flung to all sides. A vigorous blow had sent a cask containing eight or ten gallons of paraffin right down to the ice-foot. Nevertheless, very little dog-food was missing, and Isachsen was of opinion that the guests had been polar oxen.

On April 14 they left Cape South-West with loads of about 550 lbs. on each sledge. The ice was uneven, and the sledges often ran their noses fast in the big drifts. They saw nothing of their surroundings, but on April 17 they concluded, by the appearance of the ice and the fragments of plants which they found, that land was not far away. Soon the incline was against them, and they stood on the new land. For two days wind and weather kept them under arrest; but this did not come amiss, for Hassel had pierced his hand with a marline-spike, the wound had festered, and it was now at its worst.

On April 20 they went on again. Above the wide lowland

towards the west rose a great mountain, of about the same height as Cape South-West, and immediately north of this mountain the land seemed to recede towards the west. Either there must be a sound here, or the land was so flat that it could be driven across. They decided to explore this, and not waste time by going round the south part of North Cornwall, which was already known.

On April 21 they discovered for certain that the high mountain they had seen in the south was the most northern extremity of North Cornwall, and that immediately north of the island a sound ran towards the west. The sound they named 'Hendriksens Sund,' and the mountain 'Nicolays Fjeld.'

They travelled through the sound, passed 'Ringholmen,' rounded the low south-west point of 'Amund Ringnes's Land,' and followed the coast-line northward.

In the evening of April 21 they were obliged to part with one of the dogs. 'Peary' had formerly been a good draught animal, but the whole of the spring had hardly been the same dog; he was worn out, poor thing. Just before the execution Hassel gave him half a ration—so much might be done for an old servant, he said. Then he took him behind a hummock; there was a shot, and 'Peary' travelled hence. About noon on April 23 they had a very lively bear-hunt. In the evening they saw land in the west and south-west, decided to drive west, and arrived next day at 'Nathorsts Halvö' (Nathorst Peninsula), where they found a good deal of vegetation and the tracks of reindeer coming from the south.

When they turned out on April 27 they saw west of them a land extending as far to the southward as the eye could see. This was named 'Kong Christians Land.' Its north coast appeared to be rather low, but the east coast fell away so abruptly that no snow could lodge on the cliffs. In 'Kristoffers Bugt' (Kristoffer Bay) lay several floes of old ice, but only one hummock of any size; it was probably of glacier ice. If that were the case, it was the only iceberg they saw in 'Prins Gustav Adolfs Hav' (Prince Gustav Adolf Sea). The bears and foxes had made a pilgrimage up it, enjoyed the view, and coasted down again.

They worked through 'Danskesundet' (Danish Sound), passed 'Dyrebugten' (Deer Bay), and drove due north, on

May 4, to 'Renkappet,' or 'Reindeer Cape.' Here the land was less uniform, and in places sustained quite a rich vegetation. The dogs galloped northward, for there were fresh reindeer-tracks going in that direction. They did not stop before the tracks led straight down a steep, hard-packed drift which was more than they would attempt. Isachsen went on, and discovered two buck reindeer fifty yards away, but before he could fetch his gun they had disappeared. On the adjacent mountain wastes he came across track upon track of reindeer.

The most western and north-western parts of 'Isachsen Land' were also low, a land of sandbanks. On its west side the ice was coarse and pressed up in wave-like, more or less parallel, ridges. Violent upheaval must have taken place here, for ridges several yards in height lay pressed right up on land. From Danske-sundet up to 'Cape Isachsen' it was evident that there had not been open water for a long time.

This was a hard time for the dogs. 'Indiana' had a puppy now and then as they were driving along. They stopped to make an end of it, and then the train went on again, 'Indiana' throwing a long look behind her. 'Vesla' had hers during a halt for the night, but only one puppy was left in the morning; the others had most likely been feasted on. Between these two dogs there had hitherto been great jealousy, but now 'Indiana' treated 'Vesla' with tenderness, lay down across her, and did all she could for her in every possible way. One of 'Indiana's' most passionate admirers was 'Truls,' a big fellow of 92 lbs. All his approaches were energetically repulsed by the fair one, and 'Truls,' who was usually as phlegmatic as he was greedy, lost his appetite, and quite broke down from the bitter qualms of jealousy.

The land now began to trend east, and somewhat to the south. On May 16 they camped out in the middle of 'Louises Fjord.' Here the vegetation was meagre, and the only living things they saw were a brace of ptarmigan. Seventeenth of May dawned with brilliant weather, and was celebrated as festively as possible, with speeches, cheers, and extra food for men and dogs.

Along the coast here were numerous wolf-tracks, and on the ice-foot now and again was the track of a hare. It was not easy

to take specimens of the rock here, for it was so friable that it could almost be pulled to pieces with the fingers.

They followed the coast-line, and on May 20 saw land in the east. Then they steered north-east, as they could see no land in the south, and therefore assumed that they were in a sound. This proved to be correct, and later it was named 'Hassels Sund.'

On May 24 they reached the northern point of 'Amund Ringnes's Land.' This land was even lower than 'Ellef Ringnes's Land;' only in the southern portion was there a high part—'Meheia.' The entire conformation was very much rounded, and therefore, unfortunately, covered with snow.

They then shaped the course for 'Skjærtorsdagskap' (Maundy Thursday Cape), and steered on it for three whole days, reaching it at last after a journey of sixty-seven miles since it had first been in view. They saw an iceberg now and then on the way, but closer inshore the south-east wind had probably kept open a channel, for they found long stretches of autumn ice there.

At De To Kratere they saw six polar oxen, which were peacefully pasturing in some rather deep snow, and on May 29 were again at Cape South-West, where they found everything as when they had left it.

On May 31 they took a line for the west side of Graham Island. With the exception of the latter and Buckingham Island none of the other islands marked by Belcher in these waters were discovered. Considering how many sledging expeditions from the 'Fram' drove in these tracts, even before Isachsen and Hassel's journey in 1901, we must long before have discovered these islands did they really exist. It is possible that what Belcher saw were icebergs, for at a distance and in thick weather they are not easily distinguishable from islands.

In the strait near Graham Island they saw fresh tracks of reindeer, and at Nordstrand, which they reached on June 5, met with their first flock of geese of the year.

As they were nearing the ship in the evening, a violent west wind sprang up, with such drift that they had not the slightest idea where they were going. They could not drive on till the following day, and arrived on board about midnight.

CHAPTER XXV.

SPRING JOURNEYS AND SUMMER IMPRESSIONS.

ALL on board was in the best order. Peder had scraped away the snow and ice from the 'tween decks; and in the places in the hold where ice was apt to form every reminder of winter had been removed.

Nevertheless, winter lingered long in Gaasefjord; there was hardly a sign of any melting to be seen, and June 17 was about the first day that the thermometer showed positive temperature. But then fine weather set in, and the thaw was soon in full swing. In the space of a few days Gaasedalen was almost snow-bare, with a swarm of flapping, screaming geese up the river. Shooting, which had already been begun, and carried on with some success, became for a time a daily occurrence, and brought in good bags.

We prepared at once for a dredging expedition to Jones Sound and up through Hell Gate. The dredgers were to consist of Peder, Simmons, Bay, and Isachsen, while Schei, Nödtvedt, Olsen, and I were to drive their baggage out to them, and on the way back make some trips in the fjord. One of the boat party was to cross the neck to the 'Fram,' from the north side of the land, to let us know when we might fetch the boat from the mouth of the fjord. They were to dredge along the coast of North Kent on their way south through the sound.

On June 23 we broke up. Eight men and four teams. We had enormous loads, but the sledges travelled easily, and our progress was good. In the inner part of the fjord the ice was blue and bright, with large pools of water on it; it was almost entirely free of snow. But by degrees, as we went farther out, the pools came to an end, and there was deep loose snow, into which the dogs sank

to far up their sides, while the heavy loads cut right through it down to the fast ice. We camped in the evening at Ytre Eide, where we shot a few birds in the open water in the creek.

Next day we reached the boat, and found everything in the best order. The fine weather of the last few days had made the boat rather leaky, so that the tallow we had taken with us for possible caulking came in very opportunely. We rowed the boat in to camp, and put it in a pool up on the ice-foot to swell. This and various small repairs took up nearly the whole

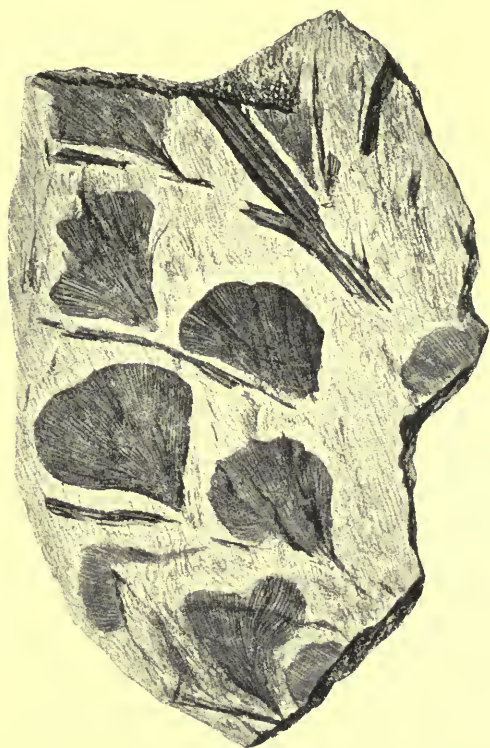


A DEAD DAY. WIND-BOUND.

of the day. We did, however, pay a visit to the south of Maageberget (Gull Mountain), and collected gulls' eggs, with which to make pancakes for supper. But Nature is bountiful—we got chickens instead. As we broke the eggs into the frying-pan, a young bird, with claws, yellow beak, and not a few feathers, came tumbling out of each into the butter. They all went to the dogs.

Later in the evening a herd of walrus came swimming along, and settled down in the fjord close under the crack, where they gave us a serenade that roused the very marrow in our bones. A more unpleasant sound than that made by the walrus I can hardly

conceive. Their bellowing was horrible to hear, and as seemingly there was going to be no end to it, we thought it better to thank them for their attentions. So we trooped in a body down to the crack, which, now that it was low water, was some six or eight feet high, took up our stand on it, and proceeded to tease the walruses.



Archæopteris archetypus Schmalh., FOSSILIZED FERN FROM THE DEVONIAN.
GAASEFJORD. $\frac{1}{2}$ Natural size.

They are animals which repay teasing, and it must have been an eminently comical sight, in this lovely light summer evening: from the ice-wall yells and wonderful gesticulations, seconded by rushing lumps of ice shot into the middle of the herd. Outside were the infuriated animals rising straight up from the sea from their flippers upwards, roaring and beating the water to a scum.

We decided to take back a load of meat with us, and Peder sent one of the walruses a bullet. But as they could not be

reached with the harpoon from the ice-foot, we had therefore to take to the boat. It was a merry manœuvre! It would not do for men and boats to be made of glass. Eight men with the boat between them shoot out and over the perpendicular wall of ice. The instant the boat touches the water, on the point of careening, four of us throw ourselves into it, and, half-full of water, it rides out from the crack. But no one has a thought for anything but the catch; the harpooner is in his place, and the next moment comes the cry from the bows: 'Fish fast!' We had a proper ducking that evening, every man of us.

We captured two animals, and towed them in to the ice-foot, where we let them lie till high water. During the night we turned out, cut them up, and fed the dogs.

For the time being the way out to Jones Sound was closed by drifting ice, but we supposed that when the tide turned the channel would clear. The day after the walrus-catching we left the dredgers and went to Ytre Eide, where we stayed for two days to shoot birds in the little bay there. There were myriads of them there, mostly eider-duck and geese. Schei captured a bearded seal which was lying on the ice; another one which he shot in the water was lost.

From Ytre Eide we drove straight across the fjord to its east side, and camped there in a big valley. The weather was brilliantly fine, and the snow melted with amazing rapidity. Across the fjord there was not a flake left on the ice, though there was plenty of water; and the dogs were all but swimming in it. Wading-time had come round again in earnest. We raised our tent on the beach close by a large stream, which ran through the valley. The mountains on the other side of the valley were what we wished to examine, but the stream was both broad and deep, and although we managed to cross it well enough in a way, the water reached to our belts.

We remained there a day or two, and had our hands full in chipping out and transporting fossils. There were multitudes to choose from, and Schei seemed never to have enough; he would have liked to take the whole mountain, if he could have done so. Now and again we struck work, and went off to try our luck with

the eiders, hares, and geese. On our wanderings we came across the ruins of some winter houses.

We moved from here diagonally across the fjord, to Indre Eide, and camped under a steep cliff. What an Eldorado for the man of stones! There was hardly a stone which did not contain fossils. And it was so convenient the way they lay strewn about on the beach at our very feet! All four of us worked hard collecting them during the daytime, but the evenings we devoted to sport. Small lakes were dotted about all over the isthmus, and in them hundreds of geese were disporting themselves. Although they were not so very shy, still we found it extremely difficult to get within range. For one thing, we had always to shoot along the ground, and in the very warm weather which we had at this time the air quivered above the hot stretches of grit, so that the quarry appeared distorted. Never in my life have I shot all over the place in the way I did at those bewitched geese at Indre Eide. I lost faith in myself and in my rifle, and at last gave up the whole thing. Still, we managed to get a few geese together out there all the same, though it went slowly. It was possible to wade across the smaller of the lakes, notwithstanding that the water was waist-deep. But Olsen cared not at all about this, and went out to fetch the birds like a retriever.

However, a wetting just at this time did not much matter. As soon as we were back at the tent and laid out our things on the sand they were dry directly. When the air is dry, and a strong wind blows without ceasing, the thermometer showing 46° to 48° Fahr. (8° to 9° Cent.) in the shade, water soon evaporates, and snow and ice vanish like dew before the sun. At one time the wind was so lively that we had to support the tent-poles, or we should probably have had the tent on our heads.

They were lovely days we had on this trip. A weather wonderful as only the land of the midnight sun can offer, an abundant scientific harvest, amusing shooting, and good food: goose fillets, eider fillets, roast hare, and the like. Olsen and Nödtvedt had not been on many of the journeys, and they enjoyed themselves vastly during these days.

On July 2 we started north to the 'Fram,' and arrived on

board in the evening. This was the end of the fine-weather period. Northerly winds set in, and the mist, grey and clammy, came sailing down on us. This, unhappily, was to be the prevailing weather that summer.

The time had come to get the ship clear for sea. Everything was got in readiness in the engine-room; the mate made a new gaff-topsail for the mainmast, and looked over the rest of the sails. In other ways, too, the work on and near the 'Fram' was in full swing. A tent was pitched on the shore, and when the meteorological instruments had been conveyed to it Baumann arranged them, and took his observations from there. In the summer forge Stolz and Nödtvedt stood the whole day long; while Fosheim carpentered with the sweat of his brow, for there was a very great deal of carpenter's work to be done before we were ready to sail.

We spent our evenings goose-shooting, chiefly up in Gaasedalen, where the geese were well shot through. The keenest shots kept at it till late at night, sometimes even until morning. On the night of July 3 Schei shot two full-grown buck reindeer up in the northern part of the valley. They were exceedingly thin; without bones, head, or skin they weighed respectively 71 lbs. and 75 lbs. On an excursion which he and Olsen went the day afterwards to Skrabedalen they shot two bearded seals, and a number of hares, geese, and ptarmigan, and had to make two trips in order to bring back their harvest of stones and animals.

On July 11 Bay and Isachsen came back on foot through 'Skrabedalen' (Dredging Valley) from Fourth Camp, where the boat was then stationed. Isachsen came to fetch some necessary things, and Bay thought the time had come to collect insects in Gaasefjord; it was his opinion, moreover, that dredging in Hell Gate could not bring to light much more of interest.

At this time there was a change in the weather for a few days, and the thaw proceeded with rapidity. Fosheim hammered a bar into the ice, and every morning measured how much the ice had thawed during the twenty-four hours. For several days it melted an inch and a half to two inches on the surface alone.

After staying a day on board, Isachsen went back through

Gaasedalen. He had a tiring march; the way was long and the snow of the wettest description, and all the torrents and streams were so full of water that it was almost impossible to wade them. I walked with him to the watershed; it was one of the most beautiful nights we had that summer. In the quiet, peaceful night the sun beamed a lovely ruddy yellow, and gave the sea and land that wondrously warm golden tone which makes the Arctic summer night so beautiful and so full of promise. No sooner had I returned than the weather changed again, and we had north wind and fog and a disagreeable fall in the temperature.

The arrangement with the boat party was that we should meet at the mouth of the fjord on July 19, and Schei, Stolz, and I set off on the 18th. The ice was compact almost as far out in the fjord as when we had last been there.

The dredgers had had dirty weather nearly the whole time. I let Simmons himself tell of their doings.

REPORT OF THE DREDGING EXPEDITION, 1901.*

On June 24, Bay, Isachsen, Peder Hendriksen, and I went down to the mouth of the fjord to take a boat which had been driven out there some time previously, and row along land up through Hell Gate. Eventual excursions were to be made to 'St. Helena' and North Devon. A party of four came with us to help in the transport of our quite considerable equipment, and afterwards took back the sledges and dogs. After a difficult drive through deep loose snow, we camped in the evening at Ytre Eide, and next day went on to the margin of the ice. As, however, a quantity of drift-ice was lying packed in the mouth of the fjord, it was not until the morning of June 28 that we were able to take the boat out. We passed the time of waiting in small excursions to the breeding-grounds at 'Maagebugten,' or 'Gull Bay,' attempts at dredging, and shooting sea-fowl at the edge of the ice.

After a digression in to Hvalrosfjord, where we did some dredging, we camped in a bay just outside Hell Gate, which later, on account of the disagreeables of a compulsory stay of six days, was given the name of 'Jammerbugten,' or the 'Bay of Woe.' On the following morning, June 29, we were able to dredge but not able to go in the direction we wanted, and we were afterwards kept by wind and fog until July 5, when we rowed on, not to 'St. Helena,' as we had planned, but direct

* From the Swedish.

to Hell Gate, where our first station was in 'Ekrementbugten.' The dredging done here was rather remunerative—several red algæ being found, among other things—but it was done under difficulties on account of the very strong current there is in these waters. The following day we made a short excursion up on shore, where it was now summer, notwithstanding that there was still a good deal of snow about. *Saxifraga oppositifolia* was in profuse bloom. We saw numerous tracks and traces of various animals, but no game. At eleven at night we struck camp, and after a hard struggle with the violent current in



SO FAR AND NO FARTHER.

the sound came up to a point, 'Cape Dønning-Hansen,' where we were met by a strong head wind and high sea, making it impossible to row farther in our heavily laden boat.

On the evening of July 7 we went northward, and towards morning reached Renbugten, or Reindeer Bay, where, after an unsuccessful reindeer stalk, we camped, then dredged and went some excursions on land. The heat in the tent during the night was so great that we could not sleep, and at half-past two in the morning of July 9 were again under way. We found ourselves obliged to row past the big, most northerly, bay in the sound, where we had thought of staying, as it was still covered with ice. Farther north, too, it was rather difficult to find a camping-place

on account of a belt of ice which was still lying along the shore. In the end, however, we found one on a point of land where the ice-margin was not particularly broad. We dredged again here, with fairly good results.

Early on the morning of July 10 we started to row on, went up, in passing, behind an enormous pressure-ridge close on Land's End, and then rowed along the shore, until a couple of miles farther on we met the edge of the ice. Here, in a little bay, we found a capital harbour for the boat and a first-rate camping-ground for ourselves. The next



REFLECTION.

thing was a good sleep after the disquiet of the last few days, but the heat still rendered this difficult, not the less so that our time of rest had fallen in the middle of the day.

Bay and Isachsen left in the evening to go overland to winter quarters ; the former to remain on board, the latter to fetch a theodolite and some provisions which were beginning to be necessary on account of our prolonged absence.

Isachsen arrived back on the morning of July 12. In the mean time Peder Hendriksen and I occupied ourselves with dredging and shooting. The results of the former were good, as on a shoal outside the bay we found what for Ellesmere Land was a comparatively large

number of species of sea-weed. Our shooting brought in some geese, a very welcome reinforcement of our stock of provisions.

Our plan was to cross over to North Kent on the morning of July 13, but we were kept till late in the day by fog. As soon as it lifted, however, we rowed off, and in three and a half hours reached a landing-place which we had decided on beforehand, at the mouth of a little river-valley. We spent the evening in an excursion to the undulating plateau which constitutes the interior of the north part of the island. It was, however, very poor country, and did not yield much. Later in the evening, after our return to the tent, a strong south wind sprang up, and the temperature rose to 46° Fahr. (8° Cent.), the highest we observed during the whole of our excursion with the boat.

The following day we started south again, through the sound, and for the first time on our journey were able to get some use out of the sail we had taken with us. This wind did not last long, but the current was with us, and in a few hours we made land at 'Spækodden,' or 'Blubber Point,' south of the large *nevé* at Renbugten. Here we put in, so that Isachsen might take some observations which he required for his map of these parts. On the morning of July 15 we moved down to Cape Dønning-Hansen, where more observations were taken, and later in the day to Vendomkap. Here, the following morning, I made a short excursion in our immediate vicinity while Isachsen was observing, and after that we broke camp, sailed down to Jammerbugten, where we picked up a box containing glasses which we had left there on the way up, and went on to Hvalrosfjord, where I wanted to do a little more dredging. This came to nothing, however, on account of a strong north-west wind, and after an unpleasant night on the stone-strewn shore of the point we were obliged to go on to Maagebugten.

As a fairly good crop of phanerogams might be expected at the breeding-place here at this time of year, I accordingly went up there, but the outcome was rather meagre, flora being remarkably poor in species. On the morning of July 18 we dredged the bay, but our harvest was chiefly pebbles. Nor were matters much better at our old camping-place inside the mouth of the fjord, whither we now went; the north wind, our old enemy, hindered our work and made it impossible to find the prolific patches at the bottom which I had already remarked here.

On the morning of July 19 we were met by the party who it had been arranged were to take over the boat, and the following morning we parted company; the boat party, which Isachsen joined, starting for North Kent, while Peder Hendriksen and I took the dogs and sledges and drove to Ytre Eide. There I made good use of the afternoon in an excursion to 'Falkberget' (Falcon Mountain), where, besides quite a

good botanical outcome—there was unusually close and varied vegetation for limestone ground below the breeding-places—I managed to get hold of a gyr-falcon.

On July 21 we drove on to Indre Eide, where I wandered about in the evening, though without reaping any particular botanical harvest. On the other hand, I found the eggs of a couple of sea-birds of which we had not yet found specimens.

The following day we started back to the ship, arriving on board in the evening, and therewith the dredging excursion was at an end. I had plenty to do the following days in preserving the results, for if, on account of the unfavourable weather and the disproportionately long time taken in rowing from place to place with the heavy boat, it was not so great as might have been wished (a whole month had been spent on this work), it was greater than that of the two previous years put together. A quantity of material in the shape of land-growths, especially mosses, had also been brought back.

The zoological collections from the expedition probably contain some things of interest, although they were not very large.

CHAPTER XXVI.

NORTH DEVON AND ST. HELENA.

I ARRANGED with Simmons that he was to go a botanical trip to the north side of the land, and we would meet him with a boat up at Nordstrand on August 6 and fetch his collections. On July 20, the day after we arrived at the mouth of the fjord, he and Peder started to drive up it with our dogs, while Schei, Isachsen, Stolz and I took over the boat and shaped the course across Jones Sound, towards North Devon, to map the unknown parts of that country. We had sledges with us. There was a slight westerly wind, and a favourable current, so that we hoped soon to be able to row so well to windward that we could hoist sail and steer on the little island north of the point. But out in the sound wind and current were against us, and when, later in the day, the breeze freshened, we did not make an inch of way; in fact, we rather fell to the east. All our efforts were in vain, and we had to sail to the north. After a rough sail we just managed to make Maageberget, and hauled the boat up into a little creek, where we camped, to await a more favourable current. We now saw that sailing in these waters without a rudder was not to be advised. We therefore fixed on straps to hold a steering-oar, and made some other necessary alterations.

On Sunday evening, July 21, we rowed in calm weather along the coast eastwards to Jammerbugten. There a wind sprang up; we sailed straight across Jones Sound, and arrived about six o'clock at a little island which we named 'St. Helena.' Surrounding it was a massive barrier of ice, which gave us a deal of trouble when we were bowsing up the boat.

St. Helena is a very interesting limestone island. Surrounded

by a flat fore-land two or three hundred yards in breadth there rose from the very midst of the island a flat-topped mountain, which from its strange shape looked absolutely like an old castle. The tooth of time had eroded the rocks and formed fantastic vaults and grottoes, and adjoining these were long rows of pillars, sometimes standing alone, sometimes framed in deep niches.

And what life and movement was there! On the top of it the gulls were nesting; in the clefts and fissures lived thousands of black guillemots, and well sheltered under the sides of the mountain were long rows of eider-ducks' nests. The sites of several tents told us, too, that some time or other the Eskimo must have been here. As far as I could understand, they had even built nests for the ducks of the same construction that is in vogue to this day up in Nordland. At all events, we came across a number of very small stone houses. Certainly I have never heard that the Eskimo were in the habit of protecting the birds in this fashion; but everything indicated that we were the first civilized people to visit the spot. Although there were young birds in most of the eggs, we found a good many that were fit for use, and had we gone there earlier, might have gathered eggs by the hundred.

The island was most conveniently situated for observations, and Isachsen got some rounds of angles between different points on North Devon and King Oscar Land.

After staying here a day, we steered a course for North Devon. The voyage began with a fresh sail, and ended in a rowing trip, during which we worked our way along laboriously stroke by stroke. We landed under a high mountain, which has been named 'Cape Vera.' Here numbers of fulmars were nesting, and here, too, we at last found represented the vegetable kingdom, though certainly by somewhat sparse vegetation.

It had been our intention to steer into 'Sandspollen,' but a huge floe came drifting up towards land, and put an effectual stop to this. The only way of getting there was to row round the floe. But in so doing we discovered that the whole mass of the ice was slowly receding from land, and, with wind and stream dead against us, we had hastily to put in to shore to avoid drifting out to sea. We landed on a point of rock, and next day wedged our way

inwards. Some way up Sandspollen we reached latish in the afternoon the edge of the fast ice, which stretched right across the mouth of the fjord to the south side of the bay. There was nothing for it now but to hibernate, and so we found a snug camping-place, just below some small lakes, where the birds were splashing to their hearts' content.

It had been our intention to drag our baggage up the fjord, but a sledging-trip on the ice with such a gale blowing straight outwards was much too risky an undertaking. The mass might drift off at any minute, and a sojourn on it would not be pleasant; for the first few miles, therefore, where the danger was greatest, we decided to keep to the ice-foot.

We were sitting at our breakfast in the tent next morning before setting off, the gale beating so at the canvas that we could hardly hear each other's voices, when suddenly its noise was drowned by a terrific clatter outside. We rushed incontinently to the door—we knew it was the boat. The storm had flung the heavy, water-logged elm boat along the beach and left it there keel upwards! We moored it thoroughly, put some stones on the top, drank up our coffee in haste, and set off on our march inwards along the ice-foot. But trudging along with the load across the countless cracks and fissures of the ice-foot, with the wind right in our teeth, was a slow business. The downpour of the last two days ceased in the evening, and we were able to dry our clothes outside the tent, in the lee of a steep crag of rock.

We were not a little surprised when we came out in the morning to see that we were again close by the edge of the fjord-ice. The violent west wind in the course of the night had actually driven the whole mass of the ice east of us far out to sea. While Schei ransacked the talus we went back to fetch the boat, and rowed it inwards. We were rather afraid we might drift out to sea during this operation, but the wind had gone round to the north, and was now off shore. Luckily for us, it was low water, and close under the high ice-foot we found the lee we required.

We sailed in fine weather straight across the fjord, and landed early in the afternoon on a point which we called 'Baadodden,' or

'Boat Point.' The long rows of tent-rings were unequivocal witnesses that we were not the first who had found a sheltered and comfortable camping-ground here. In one place a fire had been made, and we found there a quantity of bones and train-oil mixed and burned together. We took a lump of it with us.

What a turmoil was there! Thousands upon thousands of black guillemots were nesting in the steep mountain-sides. Birds flew ceaselessly backwards and forwards between their nests and the sea for the whole of the twenty-four hours. When they



FROM ST. HELENA.

came whirring down from the cliffs they cut through the air like projectiles. Their flight was so rapid that we could hardly see them; we could even hear the rush of their wings through the air as we sat talking in the tent. Out on the water they swarmed like ants in an anthill; the eiders and black guillemots kept things going ceaselessly with their shrilling and screaming high up in the treble, while the walruses grunted a steady-going bass, sometimes solo, sometimes in chorus.

From Baadodden our idea was to go south-westward, along the coast, but we thought it wiser to find out first what our prospects

were like, and from the top of a mountain, Schei and I saw for certain that the route we wanted to take was packed full of drift-ice and totally impracticable. Westward, however, it appeared as if the fjord-ice lay strong and thick as far as the eye could see.

Next day we set off with the sledge to the inner part of the fjord, first along the ice-foot, later down on the fjord-ice. We hauled like heroes, often to our knees in the pools of water, and with the sluices of heaven open above us.

It was a pleasure to camp on tolerably dry shingle in the evening, and to get rid of our wet clothing. It was not quite such a pleasure, after our clothes had been lying outside all night, to drag them on again in the cloudy weather next morning. We stayed a day at the head of this fjord, 'Viksfjord,' as we had observations to take, and the sun did not give audience before July 29 or 30, when it condescended to peep out from the curtains of cloud for a moment now and again. In the meanwhile we explored a little of the interior of the country, and climbed several of the highest points in the hope of getting a glimpse of Wellington Channel, west of the land. But there were no peaks which rose to sufficient height; all were rounded ridges; though, judging from the air, it could not be far to it. A more barren land none of us had seen before—sand, grit, and stones wherever we went; not the sign of a plant was to be seen, not the track of an animal. Our footgear was a sight to behold. The soles no longer existed, and of leather for cobbling purposes we had very little.

On July 30 we went outwards again. There was less water on the ice now, and our heavy loads rode splendidly on the steel runners. We had meant to take an observation at noon, but just as we were going ashore for a halt, the sun suddenly dipped behind a bank of cloud. Consequently we did not get the latitude; but we drowned our sorrow in some cups of boiling-hot milk. We enjoyed it amazingly, for possibly we were rather chilled by our soaking clothes. Later in the evening we settled down at our old camping-place on Baadodden, where the boat had been left behind.

While Isachsen, helped by Stolz, next day was measuring angles and observing for longitude, Schei worked in the mountains, or with me at the ruins. As far as we could see the drift-ice still closed all passage towards the south and east along the land, and our time was growing so short that if we were to reach Nordstrand on the appointed day, we must be getting north as soon as possible.

On August 1 we shaped the course straight across 'Vest-fjord.' It was calm, fine weather, and we were able to row at a good pace until we reached mid-fjord, when we got into a quantity of ice, which came drifting into the fjord with the current, and settled at the edge of the fast ice. We had no time to lose; across the ice we had to, and intended to, go. First we dragged the boat with its contents up on to the edge of the ice, then hoisted it on to the sledge, and then away with the whole thing across the floe. Well, well, we got through that day too, and again began to row northward without allowing ourselves to be tempted by all the walrus we saw, both on the ice and in the water. We lost way sadly that day, for both the breeze and the current were against us, and we could not make head against them.

We intended to sleep at St. Helena; but, difficult as it had been to get there before, it was ten times worse now that it was low water. The ice-foot, which was ten or twelve feet above us, was hollowed out underneath, so that a roof of ice projected out fourteen or fifteen feet in length. We rowed backwards and forwards for a long time along the wall of ice, until at last we discovered a kind of tunnel or roofed canal, and through this narrow channel we slipped.

We walked about the island again, and among other things paid the eider colony a visit in the hope that our previous looting of the nests might have brought the birds to lay some more eggs; but they had wisely refrained. Several of the eider mothers had taken their young ones to sea, and were busily engaged in teaching them some of the wisdom of the world. We came across the skeleton of a reindeer, on which large portions of skin and flesh still remained. Poor beast! Its wanderings had brought it to this poverty-stricken island, whence it had been unable to escape, and

it had probably died a lingering death of starvation. What indeed could a reindeer live on out on this limestone island?

From St. Helena next day we sailed north to 'Kobbbugten' (Seal Bay). Here, and at several places farther north, near Hell Gate, we helped ourselves largely to fossils. It really did not much matter where we landed in Hell Gate, we made good collections everywhere. At one place where there was a large choice, we laid the stones in a heap and fetched them on our way back. All the treasures which Schei found at our next quarters on Spækodden he packed in a box, which we left there with the sledge.

Northerly winds now set in, and it takes less than that to make it all but impossible to work up against the current in Hell Gate. Nor do the great masses of drift-ice, which come sailing south, improve matters. We had to arrange to take our rest when wind and current were at their worst, and be careful to make what progress we could when it was possible so to do. Three or four miles south of Land's End, we had to wait for a day till the north wind had blown itself out, and used up its temporary store of snow and sleet.

On August 6, at about four in the morning, the ice began to slacken towards the west, and there seemed to be a great amount of open water in that direction. Snow and mist prevented us from seeing our way; but, despite this, we rowed towards the west, and really reached open water. Then we hoisted sail, and stood north from ice-point to ice-point.

But just north of the sound the ice-masses stopped us altogether. We had no choice but to go ashore. This, however, was easier said than done. For long distances together the boat had to be dragged from floe to floe; and it was a relief when at times we could pull it along betwixt the rocking fragments. We reached land a little north of Fourth Camp.

August 6 was the day on which we were to meet Schei at Nordstrand. We pitched the tent in a hurry, had some food, and I went off. On the way I saw two reindeer. This meant making a firm stand. It was Simmons I had to get hold of, and not the reindeer. Up at Nordstrand doubtless sat virtue, in the shape of

Simmons, and waited for me to do my duty. Yonder were the two lusty toothsome reindeer. If only it had been the fifth of August! That confounded drift-ice! Then, to my relief, they winded me, and set off towards the mountains. Light of heart, I hurried on northward.

But at Nordstrand was no Simmons; and not a soul had been there during the course of the summer. He had given up his trip thither.

CHAPTER XXVII.

CLOSED IN AND SHUT OUT.

As I wished to see how far the thaw had progressed in Gaasefjord, we decided to go overland to the 'Fram,' and let the boat stay where it was.

On August 7, at six in the morning, all four of us set off. It was a tiring march; we sank into the snow to the ankles, and in some places to the calf of the leg. On the plains, near Aamot, we saw three reindeer, which were coming north on the other side of the river. It could never have occurred to us to wade to our arm-pits for the sake of these three reindeer; but we were quite willing to wait and see if they would come within range of their own accord. So we settled down, stewed some pemmican, and whiled away the time. But the reindeer made no advances, and we continued on our way, arriving on board again about seven.

A sorrowful sight met us in Gaasefjord. Round the ship was indeed some open water from the mouths of the rivers, but miserably little of it. We had expected it to extend for a much greater distance. Sad as this was, it yet had its natural reasons; for north wind and clammy fogs had prevailed this summer, and of late the temperature had been below freezing point. There lay the 'Fram,' ready for sea at a moment's notice, tugging now and again at her moorings as if she would remind us that it was time to be standing for old Norway, where, no doubt, they expected us home in the autumn. But she pulled so gently, so carefully: she was used to waiting and enduring.

On a trip down the fjord, Fosheim had found the ice more than a yard in thickness. Outside the larger streams or rivers there was a pool or two to be seen, but that was all.

On August 8, Baumann and I went a walk to 'Skrabdals-odden' (Dredging Valley Point). By a lane close under Middagskollen were lying some walruses. It was as well to be prepared for another winter here, and, in that case, we must have something to give the dogs. We thought we had better make use of the opportunity, and I therefore sent Fosheim and Peder out to capture them. They took provisions for a week, put the 'pram' on a sledge, and went off south.

On Saturday, the 10th, Bay and I paid them a visit, and found them in the midst of flensing eight walruses and a bearded seal. We allowed them to treat us to seal-steaks for dinner, and afterwards we came home across Middagskollen to get a view of the fjord. It was anything but an encouraging sight; there was hardly a hole to be seen anywhere in the ice.

On Monday, August 12, we lighted the fires in the engine-room to see if everything was in order, and we thought we might as well try, at the same time, to see what thickness of ice we could bore our way through. The forge and Baumann's observation-tent were fetched; later in the afternoon we heaved off, and tried to make our way through the outside seam in the crack. Two or three hours of hard work brought us only a couple of ship's-lengths outwards. The wind too had gone round to the north, and had driven all the small ice southward towards the edge of the fast ice, so that the vessel lost speed in the rubble. Even in mid-fjord, in the swiftest current from the rivers, we were stopped, had to go back, and moored in to the ice.

We now had a period of clear weather and frost; in the morning the ice was so strong round the ship that it would bear the dogs, and on the pools down the fjord one could walk on it. Simmons and I tried to reach the east shore in a sealing-boat, but the young ice forced us back.

Day after day the thermometer stood at freezing-point, and our hope of release was the same.

The dogs, which, as usual in summer, were tethered ashore, were let loose when we left our anchoring place, as we supposed that they would follow the ship. But most of them did nothing

of the kind; they nearly all remained where they were, and had to be fetched, and some of the rascals could hardly be induced to come with us.

Friday, August 16, brought a remarkable change in the weather. The north wind dropped, and we had an easterly breeze instead, with a great rise of temperature. In a few hours the thermometer rose to 43° Fahr. (6° Cent.), and our hopes rose as quickly. We knew that, if we could only have ten or twelve



VIEW OF ST. HELENA.

days of fine weather, the melting would go apace. At this time of the year the water is comparatively warm, and the ice very porous, so that even if it freezes above it melts on the underside. Next day the wind went round somewhat to the south, so that the masses of ice drifted inwards, and, at certain of the points, were pressed up on land. From the mountains above Skrabedalen we discovered some pools on the east shore, and also a couple of lanes, which ran straight across the fjord, one from Middagskollen across to Skrabedalen, and one a little inside of it. If we could manage the first mile we thought that, at any rate, we could reach

Middagskollen, and at two o'clock on Sunday morning we made another attempt. As we could not make our way along the east shore, we tried what we could do in mid-channel, where the current from the river had thinned the ice. For the time being we steered on a point on the east side, a little farther south. If we should find it necessary, we meant to blast the strip of ice, and we hoped that then wind and rising tide would drive the ice inwards.



AT JAMMERBUGTEN (THE BAY OF WOE). NO CATCH.

Things went well, beyond our expectations, considering that the ice was as much as a yard in thickness; but we used the engines nearly all the time as a compound, and put the vessel full speed every time we bored. Later in the evening, however, we were obliged to stop; the ice became too thick.

Baumann, who was chief of our mines, had prepared them in readiness. Fosheim had made rubber props for them, and we started to blast. But it had marvellously little effect on the tough autumn ice. We then made the mines a little stronger, and arrived at the right size, but could not lay them very deep.

Our mines, however, were in very good order; they all went off, and acted quickly. We tried shooting in two the ice-belt between the ship and the point in the east, but the ice remained as immovable as ever. Wind and weather now changed, the cold set in, and the lane closed up; the new crust and the rubble froze together into a single mass, and the vessel made no way.

On Wednesday, August 21, we had to give up our efforts out there, and went north, through the lane we had broken for ourselves, to try what we could do along the land. The old ice was much weaker than when we had tried it here before, and, had it not been for the young ice, we should have made good progress. We passed the point, and worked our way a couple of miles to the south. We went only a few fathoms from shore, but the water deepened suddenly, and in some places we had plenty of room to thrust the pieces of ice aside; at others we were obliged to saw. Between the pools, outside some small streams, the ice was so thin that we went straight through it. Later in the evening we reached the first cross lead, and tried to make our way across to the west shore, but had soon to beat a retreat; the lane was too narrow and winding. The only way now open to us was the land channel, which was not much broader than the 'Fram' herself; but the soundings showed sufficient depth, and we pushed on. We could see from the crow's-nest that the bay south of the point at Middagskollen was very shelving and shoal, but the lane, by way of compensation, was very broad. We kept on the outside of this, and went hard ahead; the tide was rising, and if we ran aground we should soon be afloat again. Sure enough we stuck fast, but soon got off, and not long afterwards reached the place where the walrus-meat was lying, waiting to be brought on board. While this was going on, Fosheim and Isachsen rowed through the lane across the fjord and fetched the 'pram' and the other things which the walrus-catchers had left behind. Meanwhile Bay and I went inwards to catch some of the dogs, which were still about at the ship's last moorings. We had great trouble in getting them to follow us, and some of them had to be led the whole way. The mate's dogs had spent the last week of their time out at the walrus-meat; but when the 'Fram' approached they ran away up on land, and

seduced four of Bay's team into joining them. On Thursday morning, August 22, we continued inwards, without troubling ourselves about the runaways; we knew we should go slowly, and they would have time to bethink themselves, and perhaps catch us up. We were well pleased with the result of this day's work; we bored our way more than two miles, which was not bad in our circumstances. If we could repeat this every day the ice would soon be forced; it would be four or five miles in the twenty-four hours, and it was not very many miles to the edge of the ice.

As bad luck would have it, the neap-tides were just at this time. The water was low on the shelf, which was shallow, and the land lead was inside the shelf all the way out. When the south wind pressed the ice close in to the south side of all the points, it was not easy to push the ice up into the crack, for the young ice, which we broke up, was stopped by all the hummocks which had come to anchor on the shelf. Until high water was greater, and carried off the hummocks we were fixed to the spot.

The time of waiting had to be made use of, so we began with the sawing and blasting; keeping a sharp look-out meanwhile. The belt of thick ice was very narrow; a mile farther out, and we should perhaps get home this year! We went some excursions ashore, and shot some hares and ptarmigan, and both Schei and Simmons worked at their science; but, with the exception of a few luxuriant patches, the vegetation out here was more than meagre. On August 26 we advanced a thousand yards, on the 27th only three ship's-lengths. It was shallow here, too—not much more than twenty feet at high water. It was not long before we had to retreat and wait for the next high tide, but there was every likelihood that then we should be able to slip past.

But it never does to prophesy. Before the next high tide there was frost, and a high wind from the north and north-west. We set off, went up to the crack, and worked hard to push ourselves so far from land that the vessel would float at low water. This week on the whole sealed our fate. The way we had sawed for ourselves could no longer be used, while the young ice became thicker and thicker every day and soon froze so hard that we had

more than enough to do to bore a way even through this. A south-east gale, which was blowing some sixty-five feet per second, did not help us much, although it was rather warm, and made the thermometer fly up and down with the gusts.

When the wind dropped a little, we at last managed to push a short distance beyond the much-debated point; but the land channel was narrow, packed full of ice, and close to the shelf, and inside of this, at low water, it was, so to speak, dry. I had some one running on ahead all the time, to take soundings and see whether we had water enough under us. But, on the whole, this gives little certainty; for, only a couple of fathoms nearer land and one may be on the shelf. In case of emergencies we let the ship take a list to land, so that we could be sure she would lie the right way if we stuck fast.

The navigation was difficult here, and of those who belonged to the deck there were only two aboard, one in the crow's-nest and one at the helm; the rest were working down on the ice to prize off the floes which the wind drove close in to the edge of the ice.

Just as we are rounding a sharp point of ice, the wind sweeps a large floe down on us, which strikes the vessel on the quarter. The 'Fram' is hindered from turning, and quietly settles herself up on the shelf! The tide had just begun to fall, and our attempts to get free were fruitless. We were in no danger, but it was a matter of waiting nine or ten hours. To be all the more sure of getting away at high water, we fastened a stout steel cable far out on the ice, and meant, if necessary, to use a gin and steam-winch.

However, as things turned out, we were not obliged to use more power. On September 4, at two in the morning, we glided off, and steamed south along the edge of the ice. In the bay, south of the point, we had to leave the crack, and entered very weak old ice, though the young ice was proportionately strong—hard, unyielding, freshwater ice, about eight inches in thickness. Nevertheless, I think we could have pushed through a lane a couple of feet wide, which ran straight across the bay, if it had not been closed on September 5 by a north wind. We had then gone about ten miles through the ice, and the belt which separated us from the open sea was hardly more than six or seven miles in

width. But there we lay, and there we continued to lie; it could not be helped. The water was blown out of the boiler and the engines laid up for the winter.

This was a hard blow for us all. The fourth polar night in succession is not a thing to be joked about. Worst of all was that we were expected home this year, and perhaps an expedition would be sent out in the summer to look for us. There was also another aspect of the matter. How were we to know that we should get free next year? But it was too early to begin speculating on such things now. If we were going to stay here another year we must see and keep life in the dogs through the winter, so that we might do some work the following year as well.

Of provisions for ourselves we had more than enough; but walrus-meat for the dogs must be procured at any price, and the sooner the better. As walrus-catchers, however, it was necessary that our clothes and footgear should be in order, so we set to work to ply needles and thread with all the expedition we were capable of.

CHAPTER XXVIII.

HUNTING FOR WINTER FOOD.

WHILE we were out on our boating trip to North Devon, two polar oxen were seen from the ship, grazing for several days on the plains which were now due west of us. So, on the Thursday, Fosheim and I got ready for a couple of days' trip, to see if we could find them. Not caring to take the dogs with us, we packed all our things on one sledge, and set straight across the fjord. We had proof on the way of how weak the old ice was in this part of the fjord, and, if it had not been for all the young ice, we should have got through it well. There were long continuous lanes where the young ice now lay as bright as a mirror, and it was so fresh from all the river-water that we could well use it for cooking-ice. Close by the crack on the west side we heard some walrus grunting and bellowing; but they were in such a hurry to take to the water that we did not get within range.

We pitched our tent in a valley with a river in it, and set off at once to try and find a few hares. But it was almost fruitless work. Fosheim did not see an animal; I saw and shot a single hare.

Next morning we began again, this time on the south side of the valley. Fosheim's attempt at a hare succeeded in the end; but I saw no more game than on my sitting-room floor. I thought it would be better worth while to make an ascent, and I accordingly went up the high mountain inside of Ytre Eide. Nearly every day lately we had been up on this high summit, which towered proudly on the east side of the fjord, and to which we gave the name of 'Borgen.' Outside the point, where the fjord was at its narrowest, there had always been a lead, and this grew continually bigger. In the two or three days since I was last at

Borgen it had, much to my astonishment, widened considerably; the old ice apparently was still decreasing.

The meagre hare-shooting, and the few old summer-tracks of big game offered little of interest; on Friday we were again on board, and prepared for walrus-catching. Raanes, Peder, Stolz, and Hassel were to drive one of the sealing-boats out to the edge of the ice, and row on to Jones Sound. Baumann and Olsen were



THE DRIFT-ICE WE FORCED OUR WAY THROUGH. SOUTH-EAST OF SKREIA.
HAVNEFJORD, 1900.

to go with them in order to bring back the dogs. Schei, Fosheim, Isachsen, and I would walk overland to Fourth Camp, bring the boat through Hell Gate, and catch walrus in Jones Sound. Bay was to drive us the ten miles to the mouth of the fjord, spend the night with us there, and then take the tent and the bags back to the ship. The boat contained all that we should require afterwards.

In the morning of Monday, September 9, the different parties set off, each in their direction. We, who were going south, reached the mouth of the fjord at one o'clock, went shooting after dinner, and killed a few hares.

In good time on the Tuesday morning we distributed the baggage equally between us ; there was a great deal to be carried, especially of provisions. The mate had taken some provisions with him, which we should have when we reached Jones Sound, but when should we get there ? At this time of year there was a quantity of drift-ice, and it was not unlikely we might have bad weather. The burdens, therefore, were heavy for each of us.

South of the watershed the weather was clear, but after that we met the fog, brooding thick and close northward over the land. At the north end of the lake up there we had a light dinner, to which we invited Bay, who had come so far with us. After that we bade him farewell, and set off northward.

On the plains, at Nordstrand, we discovered, to our surprise, a large flock of geese. We had not expected to find geese here at this time of the year, for it was cold, and there were several inches of loose snow ; we therefore supposed it to be a flock which was not yet able to fly. Schei and Fosheim tried to get a shot at them, but it proved that the geese were quite capable of using their wings, and long before the shooters came within range, the flock had risen and flown off.

We saw the tracks of a couple of reindeer, and afterwards those of two large wolves, which had been sniffing about, and towards evening reached the boat, where we found everything in good order. It was not long that evening before we were lying well moored in the bags, for we were thoroughly tired after our hard march.

Next morning there was as much mist as the day before in the north and west. This much we saw, however, that the floes in the sound, large and small, were moving full speed southwards, and, from the dark sky in the north and west, we felt pretty certain that there was a good deal of open water in those directions.

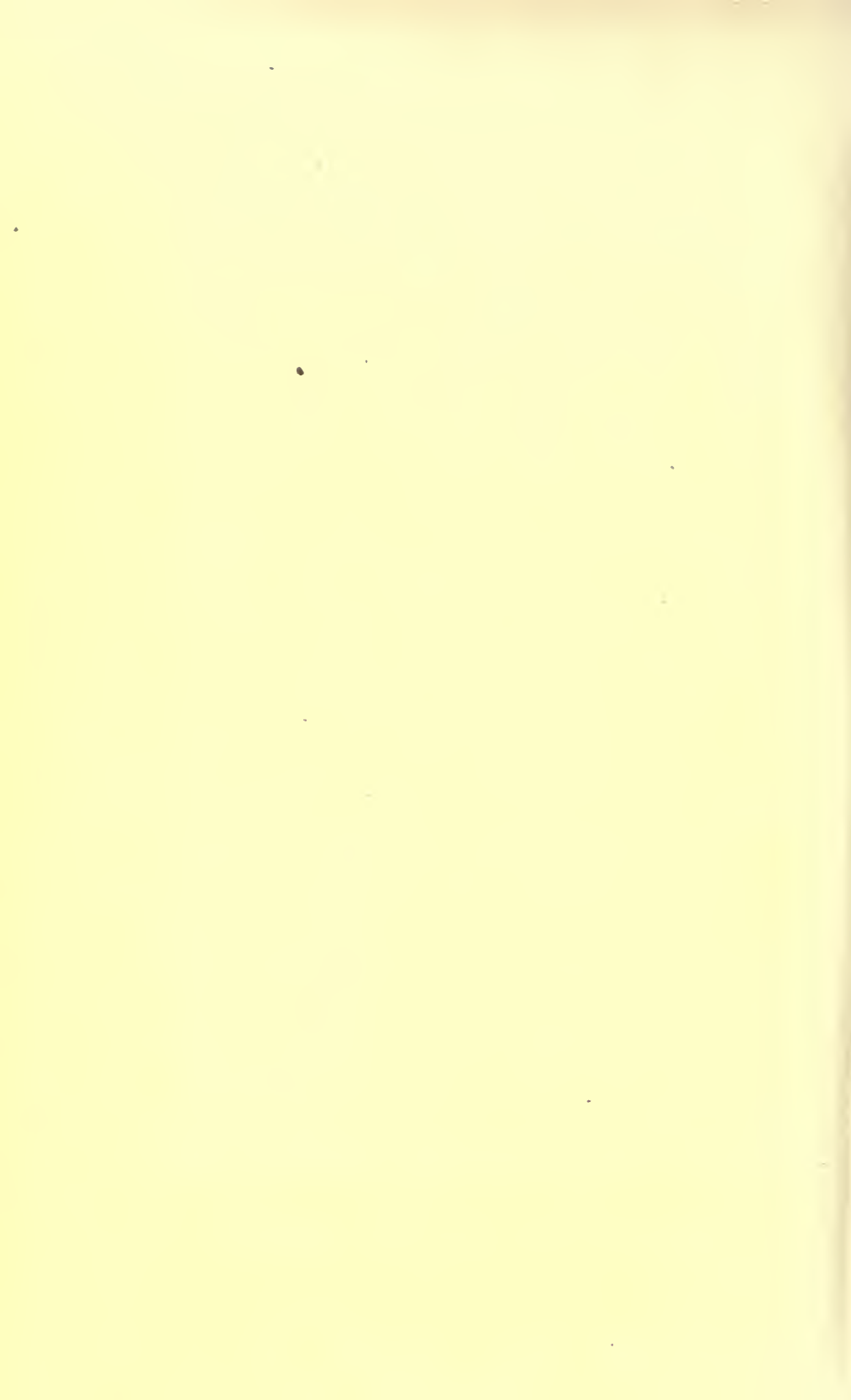
I had hoped to pay Graham Island a visit, to shoot polar cattle, and take a boat's-load of meat south. But, in this weather all we could do was to while away the time till the fog lifted, and we could see for certain whether the water was sufficiently free of ice to allow of a sail across the bay.

The waiting time had to be made use of, so we went shooting ;



Schei. Svendrup. Bay. Stolz. Hassel. Fosheim. Raaues.

AT YTRE EIDE. THE WALRUS-CATCHING ENDED. AUTUMN, 1901.



but no small game would venture out in such weather. However, I think that most likely the wolves had frightened it away, for, when the wolves have been about, the game vanishes for several days, even if it has been swarming beforehand. A hare, a few ptarmigan, a harbour seal, and a few eiders were the whole of our bag.

When the fog lifted the next morning we saw for certain that there was a considerable amount of open water across Norskebugten towards Graham Island; and we thought we could see a good deal of water northward, towards Heureka Sound. Along the land was a mass of drifting ice, but it was fairly slack, and it would not have been difficult to cross to the island. But so late in the autumn as it now was, we should, if all this ice closed, be in danger of being beset with the boat. The young ice formed so quickly that, in a couple of hours' time, it was impossible to row through it. We resigned ourselves, therefore, and decided in favour of the sound.

In order to avoid the drift-ice, we were obliged to hug the shore. Despite the tearing current, the 'shell-ice' was so thick that we had great trouble in pushing the boat through it. Happily, the stream was with us, so that we made fair headway south, and, when a breeze sprang up from the north, we sailed at good speed through the sound, and landed towards evening in Renbugten. There we went shooting, and came across the tracks of nine reindeer. We followed them up the valley, saw that the animals had gone south across the mountains, and were soon compelled to give up the pursuit. The whole of our bag was a solitary hare.

The high north wind continued next day, and sent us one violent squall after another, in a temperature of 9° Fahr. (—13° Cent.). Drift and scud hid all the hummocks and pleasant things which were floating with the tide, so that we were hardly aware of them before we were running our noses into them. A little way north of Spækodden we were stopped altogether, and had to possess our souls in patience and wait awhile, till we could lay in to land to fetch the sledges and fossils we had left there. The wind increased briskly, and when we passed the point 'Dønning-Hansen'* it had freshened so much that we

* The steward's name for the old romance 'Dønninghausen.'

had to take in a reef. The tide now turned and ran swift and hard northward through the sound. The sea at once became so choppy that, in the rudderless boat, with only the steer-oar, and at the pace we were going through the eddying current, we could no longer steer it. But this did not stop us, though we had to take in three more reefs before we managed to make Exkrementbugten, where we intended to land. But to drag the boat up the steep hill of ice was easier said than done. Though all four of us worked like horses, we could not move it an inch. So then we bethought ourselves of turning to account what help there was to be had, and accordingly hoisted our scrap of a sail, and stood up the ice-hill. It answered well, and up we went—so fast that I was afraid that the mast would snap; and we had more than enough to do to hold the boat on an even keel.

The wind howled, and the sound was packed so full of ice that we stayed where we were for a day with a good conscience. We might well have saved ourselves a shooting excursion that we made up the valley. Schei and Fosheim found a few fossils up in the bed of a river, and that was the whole of our bag.

When the wind dropped next day we went on southward. It was difficult to get the boat out from land, through the thick 'shell-ice,' and down through the sound as well we made but little progress. Sometimes we had to stop and wait till the floes had drifted past the points; now and again to drag the boat across a point of ice.

We found a sheltered camping-place in the evening under a steep mountain crag in Jammerbugten. The only game we set eyes on in the evening were a couple of bearded seals on the young ice in the bay.

We were now approaching the walrus grounds, where we meant to try our luck before we went further west. We scanned the ice carefully, but did not see a single walrus out in Jones Sound that evening. The strong north wind had sent the ice straight across the sound, and had probably carried off the whole lot of them down into the bays on the north side of North Devon. Due south of King Oscar Land there was hardly a floe to be seen.

We did not see a single walrus on Monday, September 16,

and so sailed east to Maageberget the next morning. As we were sailing alongside the land by the point between Hvalrosfjord and Gaasefjord we caught sight of a walrus out in the water. We put in to shore in a hurry, and threw all our things out of the boat, meaning to follow it. But then we discovered four more walruses out on the ice far out in the sound, and decided to attack the two nearer of these. Fosheim, who did service as shooter and harpooner, was a good walrus-catcher, and the animals were extraordinarily meek. We rowed quickly and quietly after them; they were shot in a moment, and immediately skinned.

The current was running swiftly to the east, and, during the skinning, we drifted so far away that we had to content ourselves with the catch we had made, and give up the other two animals which were lying farther east. When we arrived at our landing-place with the meat, we found that the other shooters had taken up their abode there; their tent and all their goods being up on land. Either they must be out walrus-catching, or else they had rowed up the fjord with a cargo of meat. We stacked our meat with that of the others, who had an abundant store, and made our station a little west of the other camp. Later in the evening the party came back. The mate told us that Peder, who had been taken ill out there, had been sent on board, and that Bay had taken his place. They had rowed a boat-load of meat inwards at the same time, to the edge of the fast-ice.

As it was not catching weather next day we took a cargo of meat in to Ytre Eide. The whole fjord was covered with a thick layer of brash, which did not exactly increase our pace; but by degrees the wind carried it out into Jones Sound, and also prevented ice from forming. It was necessary, if we were to feel safe from evilly disposed beasts, to have a watch out here, and this Bay undertook to be, but had first to go back to the 'Fram' to fetch a tent, provisions, and other things, and would return the following day.

We now went after walrus every day; but the catches were poor, for the ice, which came down through Hell Gate and Cardigan Strait, was swept ceaselessly by the wind down towards North Devon, and it was on the ice that we had to seek our prey. Now

and again an ice-stream, as it came floating down, brought us an occasional straggler, so that, notwithstanding, we got together a certain number of walrus. Our route lay westward towards Hell Gate, as a rule under the coast, as the wind was off shore, and forbade our sailing south. At times it blew so hard that we thought it wisest to take to the land altogether; and on such days we trudged about on the shore, in the hope of finding birds or other animals, especially some foxes, which had thought it necessary to attack our meat-magazine. Stolz shot two or three of them, and after that there was an end of their predations.

They were raw days we had on this walrus-catching trip. We could hardly expect anything else at this time of year, and particularly in the west here, where the wind blew down and out of the straits and fjords. No matter how well clothed one may be, it is impossible to keep warm, sailing in an open boat all day long, and one's feet suffer most of all. Our chief pleasures were those of the table. Fried walrus- and seal-liver were standing dishes with us at this time, and were as much appreciated as they were excellent; we feasted on them nearly every morning and evening.

On Saturday, September 21, we rowed the last cargo of walrus-meat in to Ytre Eide. We were hardly able to push through the brash, and as our store was now sufficient for the winter, we decided to stop walrus-catching. We met Bay at his post at Ytre Eide; he told us that Peder was better again, and had driven him out to the station the day after we had parted from him.

On Sunday morning I let the mate return on board with his crew, while my party were to row in to the edge of the ice and unload all the things we had in use, such as bags, tents, and the like, and which we required for shooting in the near future. It would be easier to fetch them from there than from out at Ytre Eide.

It was a hard Sunday. When we had passed the point a wind sprang up and blew straight down the fjord, and it is no Sabbath Day's work to pull a fully laden boat—we also had some meat on board—through thick trash ice, and against a strong head wind. The trash decreased, but the wind increased, and at last we were

obliged to turn back. We hoisted sail and ran before the wind to the meat station, unloaded the boat there, and beached it beside the mate's, which we had turned over and moored in the morning. There they were to lie through the winter.

It had been arranged with the mate that he should leave the 'Fram' at eight o'clock on Monday morning to fetch our things from the edge of the ice, so it was now a case of somebody reaching the ship before that hour. While, therefore, Schei and Fosheim remained with Bay to transport our walrus-catching tackle across the isthmus to Hvalrosfjord, Isachsen and I started inwards, at four in the morning. We fought our way against high wind and driving snow, and reached the ship in good time.

On Tuesday two parties went down the fjord; one to the edge of the ice after meat, the other to Ytre Eide after our things. Both were on board again before evening.

On Wednesday, September 25, the ship changed her harbour. The sails and rigging were stowed in the cable-tier, and the boats taken ashore, overturned, and well moored.

We had then to look to our clothing, sledges, and other necessary equipment for the autumn killing. Fosheim and the mate were to constitute one party; Schei and Isachsen the other. I had thought of going myself, but with a stubborn attack of neuralgia I found it just as pleasant to stay quiet. On Monday, September 30, the parties were ready to set out, and started together northward.

On Wednesday Baumann and Hassel went off to shoot on the west side of the fjord. The likelihood of finding game there was small; but the unexpected often happens, and it was not far to go.

On Thursday morning Bay's watch-dog came tearing back to the ship, so we supposed that something had gone wrong out there. Stolz was sent off at once with the dog. At Indre Eide he met Bay coming full speed to the ship, and both of them returned on board.

The following is an account of Bay's experiences at the station at Ytre Eide, as told by himself:—

'On September 17, 1901, I went with the two boats' crews, which were transporting walrus-meat, to Ytre Eide. Arrived there,

I received orders from Captain Sverdrup to walk to the "Fram," whence I was to be driven back to the point, bringing with me a tent and provisions for a few days. It was intended that I should guard the walrus meat until the ice was strong enough for it to be driven on board. At the lower part of Gaasefjord there was still open water, and I had to walk *viâ* Hvalrosfjord, where the old ice was lying, to right past Ytre Eide. I had quite an interesting trip. First of all, there was some difficulty in getting out on to the ice, as near land it was very weak, and it was also the spring tides. At last, however, I succeeded in doing this without mishap, and nothing of moment occurred until I had passed Indre Eide. After this I had some more trouble with the ice; it was rather unsafe at the mouth of the fjord, on the east side of the point. Here I went through for the first time, though I did little more than wet my feet. But in scrambling out I made a noise and put up a wolf, which was lying among the hummocks about two hundred and fifty yards from me. I had no time to fire at it, as my gun was unloaded and in its case, and, besides, I was busy enough getting on to safe ice.

'Near the headland, north of this bay, was a little rounded cove, by which were lying two bearded seals (*Phoca barbata*). As I had to go in that direction in any case, I tried to see how near they would let me come before they took to the water. The first was soon frightened, but the other did not begin to be alarmed until I was about two hundred yards from it, and I thought it was worth while to try giving it a shot. This I did, and the seal's head fell to the ice, but as I had aimed at the body and not at the head I thought in all likelihood it was not yet dead. I therefore hastened to load again, and ran nearer. A little while afterwards the seal came to life again, but only to be stunned by another shot. Again I ran nearer, and was perhaps fifty yards from it when it once more made signs of being about to dive, and I gave it a third shot. By this time I had no more rifle cartridges left. However, it had got so much that it could not stir, though it moved its head about. I therefore ran towards it as quickly as I could. While I was doing this I noticed that the ice became weaker and weaker, but I saw that the seal was lying on an old

floe joined to the young ice, and I therefore tried to reach this. Just as I was at the edge of the floe the young ice gave way, and one of my legs went deep into the water, but I avoided a further ducking by throwing myself forward, and arrived, head foremost, on the floe. The seal, which was not much more than a yard off, now became so violent in its movements that I was afraid it would break the floe to pieces, or dislodge it from the new ice, for we were just at the edge of the little bay. I therefore hastened to give it a charge of small shot in the head, which killed it on the spot.

‘I had not time to skin and cut up my booty, for my clothes were beginning to grow stiff from the cold, and I myself found it fairly cool, so I made my way with all speed on to stronger ice. I arrived safely on board without any further adventures. The day afterwards Hendriksen and I fetched the seal.

‘On September 20, Hendriksen and I, with a team of dogs, left the “Fram,” and reached the meat-store on Ytre Eide in the course of four hours, without anything of note happening to us on the way. There was a storm in the night, and as the meat—and consequently the tent—were placed in a spot where there was not the slightest shelter, we expected every moment to have the tent carried away over our heads. Luckily, this did not happen.

‘Next day I went out on to the ice in Hvalrosfjord with Hendriksen, and then returned to the tent. Not long afterwards both the boat parties arrived with the rest of the walrus-meat. The last of the walrus-catchers went on board on September 24, and I remained behind alone. I made things comfortable the first day. My house this time was not Björneborg, but a two-man tent, which was quite as comfortable if not quite as warm. There were no stones within a fair distance of the tent, so I made the guy-ropes fast to large chunks of frozen meat.

‘First I put the inner tent in place, which made things very much warmer. After that I stretched the sail of the boat over the whole of the tent, and made this fast too with lumps of meat. The sail was so big that it almost reached the ground on both sides; and at each gable wall projected a good way out beyond the tent, thus providing me with two porches. The back one I

used as a place for keeping provisions. The tent-door faced the meat-stack, which was about ten yards off.

‘Quite alone I was not, for I had kept one of Hendriksen’s dogs, by name “Susamel.” The first night she was tied up down by the ice-foot; but as I was afraid the water might reach her, I carried, with a good deal of trouble, a number of stones to near the tent and chained her up to them as well as I could. Her place



OUTSIDE HAVNEFJORD. FROM THE ‘FRAM’S’ DECK. 1900.

was about ten feet from one of the back corners of the tent, so that she had a free view to both sides of it, and to the meat-heap.

‘Of this my second hermit life there is really—though with one exception—nothing to say, and, besides, it did not last very long. The days passed uniformly in reading and short walks on the point, where I was invariably, though vainly, on the look-out for game. September 26 was marked by my shooting a raven of a kind which I had not yet been able to add to the zoological collection of the expedition. I began to feel rather dull, and hoped somebody would turn up from the “Fram”—a visit had been suggested, but did not take place. It did not seem either as if the

meat could soon be taken on board, for the fjord was still free of ice. Now and then a little brash formed, but it always drifted away after a shorter or longer time. But then something happened which enlivened me considerably, and made an end of my hermit life.

‘On September 30 I lay reading till late in the evening, and, when eventually I put out the light, I remained awake for some time. Just as I was falling asleep, I was suddenly aroused—without any kind of preparation—by a series of frightful howls from “Susamel.” I have often heard dogs howl from pain or fear, but such terror as this expressed I had never heard before. At the same time I heard a wild turmoil going on at the place where the dog was tied up. “Susamel,” apparently, was rushing round and round the length of her chain, followed by some animal with much heavier steps. That something was going on was very evident, and I therefore made all the haste I could to light the lamp and get out of the bag. But the bag was very narrow, and it was therefore some time before I was clear of it; during this performance I overturned the lamp, which at once went out, but I would not stop to light it again.

‘Outside the howls continued, and the dog and its enemy, whatever it might be, ran round and round till I could hear the pebbles scattering far and wide. But then I heard that the dog had got loose, and was running as hard as it could go, still howling and with the chain dragging behind it, in a northerly direction, towards the lowest part of the point. In this way “Susamel”—called later the “Heroine of Ytre Eide”—left the seat of war, and left me to pull the chestnuts out of the fire as best I might.

‘Meanwhile, I had got out of the sleeping-bag, and seized my gun, which was lying ready loaded beside me. I then managed—still in the dark—to unhook a couple of hooks in the tent-door so that I could see out. Being cloudy weather, it was very dark, and I could only see the meat-stack in a confused mass. I could just distinguish the outlines of a bear, which was standing by it, with its head down, but without eating, as if it were listening. I very cautiously stuck the barrel of the gun out of the tent-door.

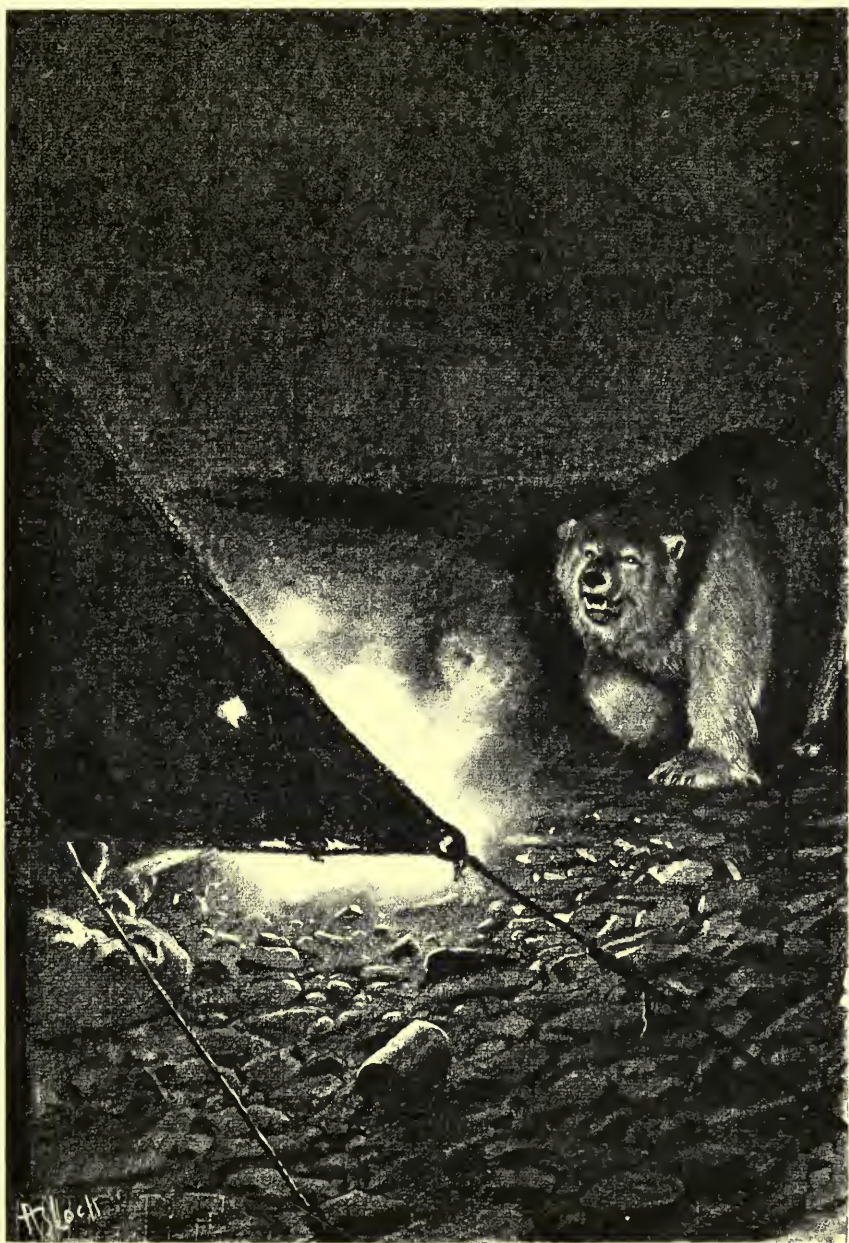
It was much too dark to aim, but as I knew the gun well, I pointed it towards the bear as accurately as I could, and fired. The only thing that came off, however, was a click, as the cock caught in the tent-door. Then, with the greatest care, I got the door right open, and crept out, which I could do unnoticed, as the sail of the boat ran a good way forward in front of the tent, and made the entrance to it still darker than the surroundings. But when I had come half-way out of the tent, one of the hooks caught in my Icelandic jersey, which was the garment I was wearing uppermost. In becoming aware of this, I touched a tin box inside the tent with my foot, so that it gave a slight rattle. No sooner was this sound audible than the bear—to my great and unpleasant surprise—came trotting smartly up towards me.

‘Here was manifestly no time to be lost. When my assailant was about fifteen feet away and still advancing quickly, I blazed at it, lying on my face, and without being able to take proper aim. The flash from the gun shed a brief light on the scene, but a moment afterwards made one only the more sensible of the darkness.

‘That I had hit the bear was plain enough, for it rose on to its hind-legs, whined from fury and pain, sparred with its fore-legs, and spun round like a top. It was the most remarkable, I might almost say, the most insane sight I had ever seen. At the same moment I observed two very small cubs which appeared from the meat-heap and stood side by side, amazed spectators of the scene which followed.

‘Well, the bear spun round and round, but by degrees the whining ceased, and it ran round in an ever-increasing circle: it was quite evident that it was seeking the reason for the pain it was feeling. Whether it saw me when I fired I do not know; but, anyhow, it must have been dazed by the shot, and the deep gloom under the sail prevented it from seeing me later.

‘I had not been able to put a new cartridge into the rifle-barrel, but the shot-barrel was loaded with ball, which I knew would have its effect at close range. I was afraid, however, that I might shoot wide, now that the bear was in such a state of activity; in that case I should be disarmed, and the shot would be



'NOW FOR IT, BY GAD.'

From a drawing by A. Bloch.



nothing but an indication of where I was. I therefore lay quite still, with my finger on the trigger, ready to use my last shot at the extreme moment, when the bear should be on the top of me.

‘And that this was what would happen I had not the slightest doubt, for in one of its rounds it came close up on my left side, and was then about eight feet away. It turned straight towards me, and I had not even time to bring the barrel of my gun over in its direction. But happily it met one of the guy-ropes, and this slight hindrance it evidently would not overstep, for it again changed its direction and ran down to the meat-stack.

‘This was its last circular tour, for my shot seemed suddenly to have an effect. Followed by its young ones, and leaving behind it a broad stripe of blood, it now rushed down across the ice-foot, which was quite under water from the spring tides, and went to sea, swimming southwards. It was not long, however, before it again lay in to land, and after that I continually heard its whimpering, and the whining of the cubs, a couple of hundred yards away; but to see anything was impossible. All this had happened inconceivably quickly, so that I had not even had time to fire my second shot before the bears made off. I then reloaded the rifle barrel, disentangled myself from the hook in the tent-door, got up, and looked round me, but could distinguish nothing. I thereupon went into the tent, and put on a few more clothes. It must have been about half-past eleven when I first heard “Susamel” screaming outside.

‘I could hear the bears in the same place all the time, and I went some steps in that direction. But as I hoped they would stay where they were until it was light, I gave up looking for them in the dark, and sat down in front of the tent-door with my back to the tent-pole and my gun clear.

‘It was rather a long night. The old bear’s wailing soon died away, but whining and growling still went on in the same place. At half-past one the two whelps came out on to the ice-foot abeam the tent, but there they winded me, and ran back again without my getting a shot at them. I still sat there for some time, and waited; but I grew cold, and thought I would go into the tent. I stood up first, however, and looked round. I then saw an old

bear creeping up towards me under cover of the meat-heap. It raised itself the moment it saw me, whereupon I fired at it, and it responded with a growl, and ran away. I now went in and lay down on one of my bags as a mattress, with another as a coverlet (I had two of them), with my head outside the tent-door, and my gun in readiness beside me. I could still now and then hear the growling at the old place. So things went on until half-past three, when I heard the cubs swimming past below the tent. I am quite certain that I heard the voice of an older animal with them; but I saw nothing, although I ran out of the tent and right down to the ice-foot. After that I neither saw nor heard anything more of the party.

‘By five o’clock it was considerably lighter. I then lighted the “Primus,” and warmed myself well; but I was far too excited as to the result of my nocturnal engagement to feel hunger or thirst, so I did not cook myself any food, but ate a little chocolate.

‘When I went out, the first thing I did was to examine the ground near the tent. This looked very remarkable; there were deep foot-prints all about the place, among the pebbles and in the loose snow. The ice-foot, which was now dry, as the water had fallen, looked like the floor of a slaughter-house; there were large puddles of water mixed with blood down below the tent. It appeared as if I had hit my mark with the second shot, for a broad trail of blood led down from the place where the bear had stood. Of the bears themselves I saw nothing whatever. I walked a good way south, first of all, but saw no sign of them. On the way back, in spite of the darkness, I descried something suspiciously yellowish-white at the very edge of the ice-foot, and on closer investigation, it turned out to be a full-grown she-bear. Whether it was alive or dead I could not make out, but its resolute behaviour of the night before had imbued me with so much respect that, for certainty’s sake, I gave it a shot in the head. It was, however, stone dead, and had been so for such a long time that the outer part of the paws was already somewhat frozen.

‘To skin the animal was no easy undertaking, as it was lying in an extremely inconvenient position, with its hind quarters poised

in the air, the tide being just now at its lowest. However, with the help of a line, I managed to bring it into better position. By about ten o'clock the bear had been treated according to all the rules of the game, and the skin and meat brought up above high-water mark. I then set off to look for the rest of my nocturnal visitors; but although I went a good way north, I found, neither then, nor a couple of days later, any sign that they had come ashore.

‘I then thought I had better look after my four-footed comrade, “Susamel,” who had taken most of the chain with her when she ran away, and might now be hung up somewhere. The tracks showed, however, that the dog, in its terror, had mistaken the way, and had gone to sea some way north of the tent, and I therefore lost the trail. I found it again after some search on the ice in the bay, west of the point. A little later I found the tracks of the bears, so that I was able to form some idea of what they had been doing at the time immediately preceding my first acquaintance with them.

‘They had come from Hvalrosfjord, and had evidently only intended to go east of the little rounded cove in the mouth of the bay. But on the north side of this they had found the track of a fox, or perhaps the fox itself, which they had then followed in a south-easterly direction straight across the point. There they had come across a box of fossils which Schei had left on the beach, a good way north of the tent. This they had examined with great care, thrown out the fossils, broken a number of them into bits, splintered the box, overturned it into the brash, and finally danced a triumphal dance on the top of everything. Tired by these exploits, they had then repaired straight to the tent *via* the ice-foot. Here the old bear—or one of the old bears—had at once taken “Susamel” in hand, and must have completely surprised her—the dog had evidently known nothing before the bear was on her. The most remarkable thing, however, was that most likely there had been two old bears; for when I fired off my second shot the first bear must already have been dead, judging by the frozen condition of its paws when I found it. Besides, I am certain that I heard an old one as well as the cubs

when the party swam past the tent at half-past three. Meanwhile, it was impossible to know the number of bears which had been about by their tracks, for they had walked close together, and the trail was a well-trodden path.

‘Some way south of Indre Eide I lost “Susamel’s” tracks, but went on farther to see if I could pick them up again on the point. I did not do this. On the other hand, I saw a man with a dog, which proved to be Stolz, and my brave watch-dog. She had been discovered in the morning near the “Fram,” safe and sound, and had thereby, as far as I could understand, given occasion to various suppositions, the most general being that she had grown tired of me because I had spent the time in telling her my—according to these tasteless people—tiresome stories. The Captain, however, had doomed her to a renewal of this torture, and had sent Stolz off to bring her back.

‘I thought it might be well to spend a night in quietness, as I had not closed an eye for the last twenty-four hours. Some of my provisions, too, required replenishing, and I therefore decided to go on board. I did not think the bears would come to the tent again after the reception I had given them, and my surmise proved to be correct, for I never saw anything more of them. My hermit life, too, came to an end, for Captain Sverdrup offered me Stolz for company, and I accepted him with thanks. Camping out alone for any length of time at this season, when the nights are so dark, has its disagreeables, though for people with a craving for excitement it can be thoroughly recommended; but for this personally I have no taste.’

Bay, furthermore, told us that the steady north wind was still keeping the fjord free of ice beyond the edge of the fast ice, and though now and then there might be a quantity of brash out there, it always drifted away to sea. The way across Indre Eide and Hvalrosfjord, on the other hand, was easy. Acting on this news I set to work to make a sledge for the transport of the meat across Ytre Eide to the cove, as I thought Bay and Stolz might just as well drive some loads of meat across the isthmus as do nothing at all; it would be a great thing to be able to begin early

with the meat-carrying. I was so eager to finish the sledge that I managed to hurt one of my knees over it, a thing I certainly need not have done, and I felt it a good deal for a couple of weeks. Baumann and Hassel, who had, meanwhile, returned from an eminently unsuccessful trip in miserable weather, had orders to drive the sledge with a team out to the isthmus, and at the same time make another try for game on the west side of Hvalrosfjord. The latter, however, came to nothing, as they forgot the

*Peder.**Isachsen.*

THE DECKS ARE WASHED.

tent, and when they returned to fetch it, I kept them on board, as I considered it almost hopeless to look for big game out there.

Saturday, October 12, Fosheim, Raanes, and Isachsen arrived back with three large loads of meat. Schei had remained behind as watchman at Nordstrand, whither they had driven the flesh of eighteen animals which Schei and Isachsen had shot. They had met the herd the day after they had separated from the other party, and at about the same place where we had come across the last eleven animals the year before.

As there were no particularly keen or pressing dogs in either of the teams, the herd had not been driven to form a square, but

had taken up their position in a long line of battle. The biggest of the oxen took its stand about fifty paces in the van, and began the fight alone. Three of Isachsen's dogs went straight for it. The first of them was 'Snipa.' The ox ran one of its horns right through the animal, behind the shoulder, and tossed it several yards into the air. Before 'Snipa' came down again the next dog was on the ox's horn, and the moment afterwards number three. The two first were as dead as they could be; only the third survived the catastrophe. Then at last the shooters came up and made an end of the infuriated ox, and afterwards of the whole herd.

They had had excessively bad weather, and had not been able to skin more than ten of the oxen. Those that were brought on board were all unskinned. Provisioned for seven days, the shooters started northward again on Monday the 14th, along with Baumann and Hassel, to finish carrying the meat. They returned on Saturday the 19th. They had driven the meat across the isthmus in two instalments, but in order to bring all of it on board in one trip, including heads and skins, they had left some of their impedimenta behind at the mouth of the fjord, and this Schei and Isachsen fetched the next day, together with some kennel-doors and different articles of wood which had been lying there since the winter before.

This year too we had our hands full of work. As the preceding winter, so again this, Olsen had extensive orders for cooking-vessels and different other things for the sledge-journeys.

When Peder began his ice measurements on October 15, he found that the ice this year was 22 inches thick against 14½ inches on the same date of the previous year—a not inconsiderable difference. The same day Stolz came on board wet through. On the way to the 'Fram' to fetch some things which they had run short of out there, he had fallen into a lane up to his waist. It was rather a cold pleasure at this time of year. He told us that twenty loads of walrus-meat had already been driven across the neck. The two at Ytre Eide had orders to fetch a cask of spirit and different material which had been collected, and which had been lying at the mouth of the fjord

since the beginning of the summer, and bring it inwards to the neck, so that we might have everything at one place when we should begin to drive.

The dog-kennels were built along the ship's side on the same principle as the former ones. The skylights were plastered with snow, and below the cabins were made warm to the best of our ability. The skylights and doors which were not in daily use had sleeping-bags and sailcloth nailed over them. The driving of the walrus-meat, which ought to have been begun on, had to be left for the present. Day after day a gale blew straight out of the fjord, rendering all transport impossible. In anticipation of the beef, Peder and I had put up some staging for it in the fore-cabin; and the whole place looked like a butcher's shop, where the meat was sorted, jointed, cut free from muscle and bone, or taken under special treatment by the steward for transformation.

Friday, October 25, Peder and I went to Ytre Eide to begin on the driving. The storm swept us before it down the fjord; the dogs went as hard as they could go, but all the same it was difficult for them to keep ahead of the sledges, which were blown along by the wind. On Saturday we had to lie to for stress of weather, but Sunday all four of us drove in again. At Ytre Eide we had great work in getting ashore. It was a spring tide, and there were several feet of water up on the crack. We were unable to cross it before we had taken the load in two relays over the critical points, and did not come on board until six o'clock.

We saw at once that it would be no use driving this way during the spring tides, and as it was now freezing briskly at the outer part of Gaasefjord, we chose that route. There and back are equally long, as we say, and the meat had to go back over the neck again. Monday we drove outwards, and started in earnest on the transport of the meat. On November 4 it was all on board. As we received the walrus-meat it was piled up in the 'tween decks, chopped into rations, and then put into bins, so that this winter most of it might be under cover.

Herewith, as far as everything of importance was concerned, our autumn work was complete.

CHAPTER XXIX.

THE FOURTH WINTER AND SPRING.

WE had several dogs which were no longer of use as draught animals; old dogs like these soon go down-hill, and so, in order not to have to feed them, I let them all be shot.

In looking over the provisions for men and dogs it proved that, with our store of dog-biscuits and stock-fish, we could promise the four-footed members of the expedition good commons for the whole of the winter.

With regard to our own provender I most feared that we should fall short of butter and coffee. At any rate, I thought it better to reason in this manner: 'Since we have been hindered in getting loose this year, we may risk the same story over again, and therefore it is better to be economical with these particular provisions.' Our after-dinner coffee, therefore, was struck out of the programme, and the butter-scales were taken into use. The paraffin was also measured out; for the single cabins rather more than one gallon a month was allowed, for the others one and a half; the lamps in the fore- and after-cabins burned, as hitherto, till eleven in the evening. The coal for the galley and for both the cabins was weighed out each week.

In other ways things went on in pretty much their usual manner. The winter passed in hard work for the coming spring season, especially in the mending and improving of the material. Olsen had a long and difficult piece of work with some of the magnetic instruments, the repairing of which took a good deal of time, and required great nicety. In addition to this, he was constituted maker of mines, so that we should be ready for ice-blasting in the summer. Nødtvedt had his hands full preparing the skins of

dogs and polar cattle, and was also very much taken up in the forge. He experimented, among other things, in making different kinds of ice-bores for use when blasting. Again this winter he spent many cold days at the carpenter's bench in the 'tween decks, where he worked early and late, and always equally undaunted. It was the making of measuring boards, packing-cases and boxes for different instruments which this year took up his time, and it is work which requires much care. The steward was equally busy, turning out dainty cakes by the dozen. We were to have a Christmas tree again this year, as decorative as on other occasions. Simmons and Baumann helped by drawing and painting a number of flags. Special mention must be made of a particular flag known as Bay and Lindström's. In everyday parlance these two well-fed members of the expedition were mentioned as partners, and on this occasion also they were not divided. Their colours were red, blue, and—fat.

When I mention that every man took his turn in seeing to the fires, that the meteorological watches also went by turn, and that looking after the dogs this year was very little trouble, as they were so extremely peaceable, there remain only two branches of our work at this period to be mentioned—the one was industrial, the other literary. A wholly new industry sprang up this winter, for we began to carve in bone. Knife-handles and sheaths of gracefully carved walrus-bone were produced in numbers, and were intended as gifts for friends.

During this time was also the golden period of the 'Fram' literature. Bay published a novel, by name 'Gunhild.' Its theme was exceedingly romantic. A party of discoverers went an expedition to North Greenland; after a difficult journey through the ice-desert they reached a large and fruitful oasis, where they met the descendants of the old Norsemen. These had fallen into two inimical races, continually at war with each other. Among the many other rarities which the travellers came across may be mentioned mammoths and rhinoceros. During the writing of it the author showed himself a master in the art of whetting public curiosity. He wrapped himself in the most impenetrable obscurity, and no reliable information leaked out even with regard to the

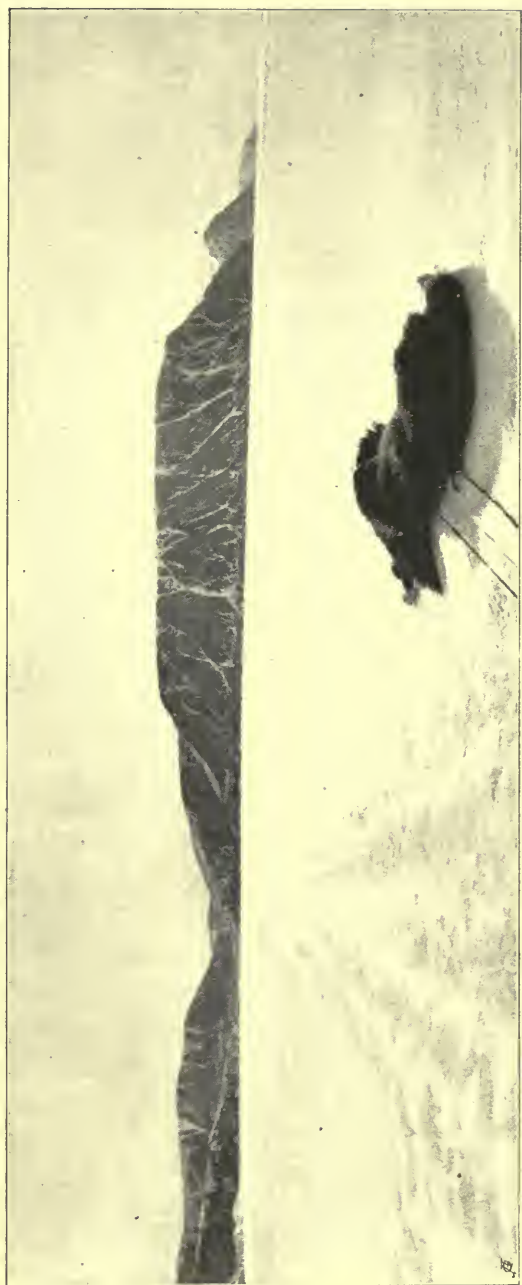
title of the book. Like every volume which aspires to a place in the book market, it was ready for Christmas. It was very exciting, and was read with avidity.

We kept Christmas well and long, and walked about a good deal in the brilliant moonlight. We had to be stingy with the brandy; but I gave Simmons some spirits of wine, with which he brewed 'glödgad,' a kind of liqueur, and that sorrow was healed.



LEAF-BEARING STEMS OF SEQUOIA AND GLYPTOSTROBUS, CONIFERS FROM THE TERTIARY. STENKULFJORD. Natural size.

Rather later on in the winter we began to make preparations to drive sand on to the ice, to help on the thaw in the spring. Fosheim made boxes and Nödtvedt picks for this purpose, and then we set to work. We had to sand a distance of some four or five miles, and this we divided into lengths, so that each of us had his own bit to look after. We could see each other as we were working out on the ice, and this occasioned great competition. The work went very quickly, but perhaps it was because we were



OFF HAVNEFJORD.

all so anxious to get home, and firmly believed that the sand was going to work wonders. For the present we dumped it in heaps down the fjord as far as the point at Borgen, and left the rest to be done after the spring journey. It was not advisable to scatter it before the snow had melted, as otherwise the thaw-water would carry away all the fine sand with it, and this it is which is the most efficacious.

We had great plans for the spring. In case a ship might come into Jones Sound in the course of the summer to look for us, we resolved to build cairns, and leave a record of our expedition on Cone Island, and on the different points in the sound. The coast-line west of Greely Fjord was to be examined, and the still unmapped coast of North Devon mapped. We had to send a sledge-expedition to Beechey Island, partly to correct our chronometers according to the place-determination of the English, and partly to look at the depots which they had left there half a century before; and furthermore to try to find the sloop 'Mary,' which John Ross left behind him in 1850. If we were unsuccessful in getting away this year too, I should be obliged to send news of the expedition to Danish Greenland, and it might then be a good thing to be in possession of a seaworthy vessel. We could indeed sail down to Danish Greenland in one of our own boats, but it would be far better to make use of a sloop of the kind.

Isachsen, Fosheim, and Hassel were to go eastward, and leave the records of the expedition; Schei and I to make a long journey north, and map the tracts west of Greely Fjord. Baumann and Raanes were to come with us to Storöen, where we intended to put down a cache, which the northward-bound party could make use of on the way home. By the time the returning party were again on board, the cairn-builders would also be back, and then Baumann, Fosheim, and the mate were to go over to Beechey Island, and Isachsen and Bay to drive across the sound to North Devon, surveying.

On April 1, 1902, all three parties went off. During the first part of the spring season the weather was of the worst kind: north wind and falling snow, with exceedingly difficult travelling. Added to this was the fact that our dog-food this year was

considerably heavier than heretofore. The patent food was nearly at an end, and we had to take to stock-fish. Knowing as we did that bears were to be found in Norskebugten and the tracts northwards towards Björnekap and Heureka Sound, we had every reason to suppose that it was not worth while to drag blubber and meat with us from the ship. We contented ourselves with stock-fish only, though even that made a great difference in weight. But in Norskebugten we discovered, to our infinite regret, that all years are not equally good bear years. We waited day after day to get hold of one, but never saw so much as the track of a bear. The dogs lost flesh from their hard work, and every day were less able to pull. Still we worked our way up to the outer part of Heureka Sound, and on April 8 pitched our tent at 'Hareneset' (Hare Point). The dogs were quite exhausted already, and I thought it better that Baumann and the mate should return, and we would try to manage without the cache. At the place where we pitched our camp was a regular bears' highway, and the point south of us, where the land trended eastward to Baumann Fjord, consequently acquired the name of 'Björnesvingen,' or 'Bear Corner.' I thought it was worth while to stay here for a day and try to shoot a bear, and next day the weather was not so very bad, while the sun peeped out now and again. The two others went off in good time, and hoped to reach Björnekaplandet by evening. After saying good-bye to them, Schei and I went ashore to look for hares. The best time of day for them was over, but nevertheless we shot a few, and decided to stay where we were the following day. Altogether we shot seven and a half brace there. We kept a few bits for ourselves, but most was given to the dogs, and they really improved a good deal during this time.

No bear, but bad going and very bad weather, was the order of the following days, and we were obliged to lie to for a couple of days under some rocks. It blew so hard that ice and land were smoking all the way down the sound.

On April 16 we stopped fairly early in the evening in the lee of a point. Time after time we had looked into the short valleys on our way northward, to see what they had to offer, but not a single animal could we discover; and along the shore where before

there had been the trail of bears the whole way we went, there was now not the sign of a track. Perhaps this was because the old ice from the previous summer was unbroken, and the seals in consequence had migrated to places where there was open water at that time and where now consequently the ice was only one winter old. At any rate, I think that this phenomenon must have been connected in some way with the unfavourable conditions of the previous summer.

Later in the evening the wind dropped, and we went to rest in fine weather. About eleven o'clock the dogs woke us up with a start; they were yelping and making such a noise, that we knew that there must be something the matter. We ran out as quickly as we could, but the expected bear was nowhere to be descried. But that there really had been something going on we understood at once, for the dogs' hackles were bristling and they were looking north-westward, pulling and jerking at their traces, and giving tongue as if it was a matter of life or death. We followed the direction they were looking in, and saw a bear, far out in the sound, trotting briskly southward. I ran to my team, and sent them off one by one as fast as I could unharness them, so that they might be loose and unhampered. 'Gammelgulen' was the first to go off the slip, the others followed quickly, and not many minutes afterwards they reached the bear, turned it, and came running inwards towards land. The bear was determined to go up a difficult stony valley a little north of our tent, and, try as the dogs would to prevent it, up the valley it went. Schei and I ran full speed northward along the ice-foot, and soon heard that the dogs had brought it to bay. We made a short cut across some hills of grit, and, when we reached the top of one of them, saw the bear on the other side of the valley, sitting on a high hilltop, which fell almost sheer away. But on the north side it was accessible, and here it was probably that the bear had climbed it. There sat the King of the Icefields, enthroned on a kind of pedestal, with the whole staff of yelping dogs standing at a respectful distance. I tried a couple of shots, but overrated the distance, and the bullets went over the bear's head. I then told Schei to go and shoot it whilst I looked on at the further development of the drama.

The bear's position was a first-rate one. It had taken its stand on a little plateau high up on a mountain crag; this little ledge was reached by a bridge not more than a good yard in width, and there stood the bear, like Sven Dufva, ready with his sledge-hammer to fell the first being that should venture across.

Meanwhile Schei was climbing and scrambling in the snow and stones without seeing the 'white 'un,' which was hidden from him by the ground. His Majesty was not visible until Schei came within a few feet of him, but then it was not long before a shot was heard. The bear sank together, and a few seconds afterwards all the dogs had thrown themselves on to it. It was very plain these fellows had not been surfeited with bear-meat. They tugged and pulled at the bear's coat, tearing tufts of hair out of it, and before we knew what they were doing, had dragged the body to the edge of the plateau, where it shot out over the precipice. The dogs stood amazed, gazing down into the depths where the bear was falling swiftly through the air—but not alone, for on it, as large as life, were two dogs, which had clung so fast to its hair, that they now stood planted head to head, and bit themselves still faster to it in order to keep their balance. I was breathless as I watched this unexpected journey through the air. The next moment the bear in its perpendicular fall would reach the projecting point of rock, and my poor dogs—it was a cruel revenge the bear was taking on them! I should now have only three dogs left in my team.

The bear's body dashed violently against the rock, turned a somersault out from the mountain wall and fell still farther, until after falling a height of altogether at least a hundred feet, it reached the slopes by the river, and was shot by the impetus right across the river-ice and a good way up the other side. And the dogs? When the bear dashed against the mountain they sprang up like rubber balls, described a large curve, and with stiffened legs continued the journey on their own account, falling with a loud thud on to the hardly packed snow at the bottom of the valley. But they were on their legs again in a moment, and set off as fast as they could go across the river after the bear. Not many minutes afterwards, the whole pack came running up; but when



A BAY UNDER MAAGEBERGET, NEAR THE WALRUS STATION. 1901.

they were driven away from the carcase they lay down again to await their turn. I hurried back to camp to fetch the dogs' harness; we put a connecting lanyard through the nose of the mighty fallen, and set off.

The dogs knew well enough that this meant food for them, and the nearer we came to camp the harder they pulled. In fact, I had to sit on the carcase to keep them back, and, jolting backwards and forwards, on this new kind of conveyance I made my entrance into camp, in the light spring night. The bear was at once skinned, and the dogs had a meal. When they had finished, there was hardly any space between their ribs.

In order that the dogs might recover as much as possible, we remained a day at 'Bjørneleiren' (Bear Camp), and broke camp on Friday, April 18, with full music from the north wind. But, though it was against us, our progress was not bad on the hard-packed snow, and in the evening we camped at our old ground on the south side of Storöen. Not far off was a well-preserved Eskimo house, which was now snowed down; but we knew the place from of old, dug our way into the house, and left some things in it. We piled up some stones outside the door to keep the foxes out.

There had been a good deal of open water along the east coast of Storöen, and three or four miles south of it we came into thin autumn ice, which was much pressed up. It was very bad to travel in, but there was bear-track upon bear-track. We also saw two living examples of these animals, but we had not time to think about them now, nor could we drive more food than we already had with us.

Next day we went on again northward, in lovely quiet weather, but over the same kind of ice. We saw countless tracks of bears, foxes, and wolves; they had been marching backwards and forwards on the young ice round the island. At noon we passed a point where two hares were sitting a little way above the crack; this was too much for me, and I had to go and shoot them. When evening came, with bad weather, we had done a nice day's march, and were able to camp a little way south of Maiodden.

The bad weather continued, but we were so late that we were

obliged to push on. We passed one polar herd after another, but would not lose time by shooting them. We did not mean to sacrifice a day to shooting and getting food for the dogs until we reached Isfjeldodden. Before starting for the unknown coast in the west we thought of making a cache of meat for use on the return journey. Judging from our acquaintance with the country thereabouts, we thought it would be easy to procure a sufficient store.

We had not forgotten our experiences of the previous spring, of the ice in Heureka Sound up towards Smörgrautberget, and this time laid our route along the east shore. I felt certain we should find a better way there, at any rate, if we turned a little way into Greely Fjord. The ice consisted chiefly of pressed-up young ice, with an old floe in between here and there. In all likelihood the sound at this part had been almost free of ice the summer before.

Our shooting at Isfjeldodden did not even end in smoke, for the simple reason that we met never an animal. Numerous tracks in the snow, however, convinced us that if we were willing to give up a day to driving inland we should not come back empty-handed. But time was growing short, and we had to go west.

From the northern end of the promontory we steered straight across from Greely Fjord to Blaafjeld, keeping to the east side of a pressure-ridge, which stretched straight across the fjord. I imagine that, to a certain extent, this ridge was the boundary between the fast ice of the previous year on Greely Fjord and the drift-ice outside. We went splendidly until we were right under the precipitous mountain, but there we had the same horribly bad going which we knew so well from the northern part of the sound. Right out in the middle of the shining ice, one after another, were a number of clods of snow, exactly like enormous horse-mushrooms. The passage between these long rows of mushrooms was so narrow that there was no room for the sledges. They stuck fast in them almost before we knew it, and every single time the fore end had to be lifted clear. This was, without comparison, the worst going it was possible to have; we could not use our 'ski,' and it was difficult to get along without them.



OUR 'BEAR CAMP' IN STORFJORD, 1902.



Farther west the ice near land was covered with stones and grit, which would make an end of the German silver at once. We therefore had to turn a good way out into the sound, and let the sledges run into every mushroom we passed.

The mountain we had to the north of us was, without doubt, the highest in all the newly discovered lands. It was a colossal wall of rock, which for long distances fell sheer into the sea. The wind appeared to enjoy itself under these great precipices, and found there an unexceptionable playground. Grit and pebbles had been



PRESSURE-RIDGE AT LANDS LOKK. 1902.

swept several miles from land, and if we were to make any progress at all, there was nothing for it but to keep a course half a mile to a mile from land where, by way of return, our route was an unceasing struggle with the old ice. Farther west things improved, and at times we could drive almost under the crack. Now and then Schei went ashore, and here also found some fossils.

We now had some days with a particularly high temperature, considering the time of year; in the misty air under Blaafjeld the thermometer read as much as 16° Fahr. (-9° Cent.), and at mid-day there was sometimes thaw-water from the ice under the steep walls of rock.

Farther west the ice receded from the sea, and gave place to a narrow strip of shore; at the same time, too, the going improved, so that we could drive along the ice-foot. There were plenty of hares here, it appeared, and from the tracks they must have been about in flocks. Now and then a hare ran along the ice-foot; we saw three of them as we drove along.

On April 28 we came to a large waterway, which cut through the land for a great distance in a northerly direction. We thought at first that it must be a sound, decided to explore it, and with much difficulty, and through snow that became looser and looser as we went on, made our way up the fjord.

As we were turning round a point a little after midday we saw two or three hares a short way above the crack. We had to have them, for dog-food was growing seriously short; day by day the dogs became thinner, and were less able to pull the sledges. We had had hard work and bad weather nearly the whole time, and it was long since we had been able to get extra food for them. We had, indeed, seen the tracks of reindeer going from east to west in a few places, and six or seven miles east of Blaafjeld we had come across a bear-track. But our hope of big game sank lower and lower every day, so that we were glad to take what presented itself in the way of ground game, as far as we could do so without wasting ammunition.

When I had shot the two hares and was just going up to fetch them, I caught sight of a whole flock of the same kind of animals a little higher up. It was not long before I had altogether twelve hares on my conscience, and then I stopped on account of the ammunition. We had, at all events, a hare apiece for the dogs, and half a hare each to our own cheek.

I took as big a burden as I could carry, and went down again, and although the odometer only showed a day's march of seven or eight miles, we camped at this point, so that the dogs could have a good rest. There was high feeding for them that day: their ordinary allowances, and a giant hare apiece into the bargain.

We named the fjord 'Harefjord,' and not without reason. Almost wherever we looked we saw hares scampering in all

directions. The place was teeming with them. They ran about as if they had taken leave of their senses. It was in the midst of the pairing season, and we supposed they had lost their heads from love. It is a thing which may happen to others besides hares.

When the camp was in order, Schei went a short trip ashore, and shot a couple of brace of hares on the way.

We began at once on repairs of divers kinds. The sledges had been much knocked about out in the old, coarse, polar ice, and many a time I had expected to hear them smash to pieces when they ran away over the steep rugged ice-slopes. The odometer plate, too, had come rather to grief, and had to be unscrewed from the wheel and warmed at the 'Primus,' before we could get it to rights.

Up the fjord the following day the going was pretty good, as long as we were able to follow the ice-foot. Some old ox-tracks in the clay told us that it was not only hares that were in the habit of visiting these parts. As we were rounding a spit of land, a high cliff came into view which we supposed closed the fjord. We therefore thought it was time to turn back, and made our way across to the opposite side, but now things became really bad: bottomless drifted snow, into which the dogs fell, and then had to take to swimming. In the worst places we had to march on ahead and trample a path. All we could do was to take a line across to the opposite shore in the confiding hope that the going would be better close under land, and this it proved to be. We camped in the evening under the headland on the west side of the fjord. The dogs were quite done up, but had a little extra food again to-day, as Schei shot them a few hares.

Next day, April 30, we set off west, on fairly hard snow, but through bad ice, which lay pressed right up to the steep cliffs towards the north. We could not keep clear of the polar ice here, as the ice inshore was covered with grit and pebbles. Many times we hardly knew where to go; save ever onwards. We had done regularly our seventeen or eighteen miles a day of late; but here we had to be content with thirteen or fourteen.

Mist and snow did not improve the situation either for ourselves or for the dogs.

In the evening we camped out on the ice, looking towards the most westerly foreland we had seen the year before from Smörgrautberget. We guessed the distance at about nine miles.

On Thursday, May 1, we were again driven out from land by stones and grit, and had alternately the same troublesome bright ice and loose snow. Beyond the cape, which we had long had in view, the land trended more to the north, but we could not see much of it through the snow-laden air. We passed the night near a large pressure-ridge, and in the morning saw for certain that we were on a fjord or sound, which penetrated the land in a northerly direction. This we had to make sure of, and therefore, took a line northward.

As with our previous attempt on a fjord running north, the snow became worse the farther in we went, and later in the evening the weather also thickened. We had to force our way across broad belts of old ice; sometimes these were very rugged, and at others had deep hollows and ditches in them, which were filled with loose snow. We fought our way a few miles inwards, and camped under a very high crag of rock, which stuck out a little way into the fjord.

As next day brought no improvement in the weather or the snow, we decided to return. It was too risky to go on driving with so little certainty and in such miserable travelling. If this were a fjord it might delay us, and prevent us from ascertaining the extent of the land to the west, and that would never do. As long as we followed our own tracks back we did well, but when we made for the western headland, we could hardly get the dogs along at all, and had to go on in front and stamp a way with our 'ski;' consequently we made but little progress, and still less when the wind sprang up. That night our camp lay snugly sheltered by the grit-hills near the western cape.

The day afterwards we pushed on again. The land trended to about the true north, and as the weather gradually cleared we saw land in the north-west—it was a bay, then, we had before us. On the other side of the bay the land entirely changed its character.

It consisted of low, rounded ridges, with such flat and roomy valleys in between that at first we took it to be a group of islands. It seemed so near that we thought we should be able to reach it in four or five hours, and we straightway took a line for the part of it which was farthest off. Advance was certainly difficult; but, all the same, we managed to make sixteen or seventeen miles. Nevertheless the cape still kept at a distance, and, when we camped in the evening, was to all appearance equally remote.

Next day we made up our minds that we *would* reach the cape. We started before half-past six and went as hard as we could drive. Each time that, through the mist or driving snow, we caught a glimpse of land, it appeared to be as far off as ever. Still, we reached it by evening, looked about a little to find shelter from the raging snowstorm, and took refuge at last inside a chain of pressure-ridges, of which several must have measured their fifty feet.

Here the country was so difficult to make one's way in that, as the gale was equally rough next morning, Wednesday, May 7, and the air so thick one could cut it with a knife, we thought it best to remain where we were. Towards noon next day it cleared so far that we were able to take a meridian altitude, and go ashore to look about us a little. Along the shore, especially out by all the points, stood great pressure-ridges, like fortifications trying to cut off our way; though in truth there was little enough that required defending in there—stone and grit in masses, but hardly a sign of vegetation.

We could not expect to find big game for the first fortnight, and our dogs were in such a deplorable condition that we dared not do otherwise than turn back. In the afternoon I went up a height to the north of us, while Schei took some observations. I had a fine view in all directions, and saw that the land we were lying by was an island, separated by a narrow sound from the land in the east, which I also suspected to be an island. On the whole, I think to this day that a number of the countries there in the west are islands. From a point, about three miles north of the camp, the land turned to the north-east, while in a westerly

direction it appeared as a large lowland with extensive sands, where the sea-ice lay pressed up to quite incredible heights. North and west of this land, as far as I could make out, was sea, and again sea, with ordinary coarse polar ice. South of us was Axel Heiberg Land, which did not rise to any great height, but fell very abruptly into the sea. I drew a sketch-map of the land as it appeared from this spot, and with some trouble collected enough



AT LANDS LOKK. OUR NORTHERNMOST CAMP. 1902.

stones to build a small cairn, which, at any rate, was not too small to be seen from the camping ground three minutes south of the spot.

I went home; we took a few more azimuths to different places, and then began to make the 'butter porridge,' for it was a standing dish at our farthest point north.

This spot lay on $81^{\circ} 40'$ north latitude, and has been named 'Lands Lökk,' or 'Land's End.' It was the farthest point north of the expedition.

CHAPTER XXX.

TO SMÖRGRAUTBERGET.

ON Friday, May 9, 1902, we started home; there was a southerly breeze and thick weather. Almost before we knew what we were doing we ran down into deep ditches or stuck fast in great drifts. We laid the course east of 'Bergholmen,' straight across 'Fridtjof Nansens Sund' to the northern extremity of Heiberg Land. The ice was very much broken, and was covered with high pressure-ridges. But our progress was not so bad all the same, for, firstly, the old ice was rounded off by melting; and secondly, farther away from land we came across an extensive belt of even ice from the previous winter, which showed that there had been a lane straight across the sound down towards Heiberg Land. In certain places this lane had been pressed together, but it did not present any difficulties.

After spending the night half-way out on the sound under the lee of some exceedingly high pressure-ridges, and after taking some azimuth observations, we started on our way next morning, with our course on a high steep cliff, which we reached latish in the afternoon. It proved that this mountain consisted chiefly of flint and lava. Schei was very much taken up with this interesting discovery, explored the mountain well, and took a good many samples of it. On the other hand, he found hardly any trace of vegetation.

We pitched our tent up on the crack, between some mounds of grit, where at first I thought to have found the ruins of former habitation. But we discovered later that water and ice had been the builders, and had piled up the stones.

Although the snow was loose and sluggish, and the dogs in bad

condition, we had managed to make seventeen or eighteen miles every day since we turned back.

We saw that we should soon be very much put to it for food if we did not shoot game before we had gone much farther down Heureka Sound, and resolved on a different division of our time. Each spell was now to consist of six hours, with a twelve hours' rest between. In this way we got in on an average three spells in the forty-eight hours, and could thus cover considerably longer distances in the week than we had been able to do before. This, of course, was very hard work, both for men and dogs. For the latter at first it was not so bad, as they were able to have their resting-time undisturbed. We, on the other hand, had to camp, feed the dogs, cook our food, and take all the observations; besides which Schei, at every camping-place, had to look for stones and plants. All this would have mattered little enough if only the weather had been better, but there was not much to be said for it.

When the fog lifted now and again we caught a glimpse of our old friend Kvitberg. It is surrounded by lowlands, and looks very much like an island. It towers high up above its surroundings, and is imposing from its bold outlines as well as from its height. The slopes on the east side where it rises from the sea are less abrupt, and are entirely covered with snow, its steepest declivities being towards the north-west.

We pushed on as well as we could, and every mile we went looked with more and more impatience for game. The land had changed its character, and seemed now as if it ought to be a fairly good game country. Small sheltered fjords cut into the land, and pretty valleys ran a long way inland to the west, and from these it could not be very far across to the fjords on the west coast.

Progress on the ice was difficult. We had to keep the whole time to the crack, and for long distances were obliged to creep along by the side of the ice-foot and carefully follow all its twists and turns.

On May 12, after we had been driving for three or four hours, Schei discovered through the glasses, far inland, a herd of twelve or

fourteen polar oxen. We held a council, but thought the animals were in such an inconvenient spot for us that it would hardly be worth while to spend time in going after them. They were far away, the country was difficult, and we should also have to ascend to a good height. By way of a change, too, we had quite good driving weather that day, and so thought we had better make the most of it, and do as much as we could. Then, too, having come to parts where there was game, it was to be hoped we should soon find a herd which it would be easier to get at.

But we came to regret this decision. No sooner had we begun to drive again, than the wind sprang up, and we had rough weather for many days. The ice was often so bad that we could not go on, and there was nothing for it then but to camp and wait for an improvement. But we kept steadily at it, made use of every opportunity, and at last reached Kvitberg on the evening of May 14.

Kvitberg was a first-rate place for observations. We made our camp close under it, and meant to go to the top, but the weather absolutely forbade any climbing. We had to content ourselves by planting the theodolite a little way above the tent, at a point where the view towards the west and east would not have been at all bad, if only the weather had been a little clearer. We waited patiently for twenty-four hours, and then really got observations: longitude, latitude, and an azimuth; but we did not see much of the sun, and very little of our surroundings.

On May 15 we left this place. A stiff north-west breeze was sending the snow dancing in front of it, but we had the wind at our backs, and went so fast that clouds of snow flew up behind the sledges.

We now resolved to find out for certain the question which had long exercised us, namely, whether 'Scheis Ö' (Schei Island) was really an island or only a long peninsula. We drove south through a waterway west of the island, and ascertained it for certain to be an island. The sound between Heiberg Land and Schei Island has been named 'Flatsund.'

We had now, of course, gone considerably out of our way, but progress was easier so far to the south, and I think it was a good

move. When we again turned north, we had such loose snow for a time that the dogs sank in it half-way up their flanks. How they worked, poor animals! I was sorry for them, but onward we had to go. To give in would have been destruction both for them and for ourselves. We camped in the evening seven miles from Smörgrautberget.

On May 16, about one o'clock, we reached our old camping-ground at Smörgrautberget. We reduced dinner to a minimum, and went ashore to take observations, which were very successful both this day and the following one. On an excursion a short distance inland, Schei discovered the tracks of a herd of polar oxen, consisting of nine full-grown animals and some young calves.

CHAPTER XXXI.

SEVENTEENTH OF MAY—WHITSUNTIDE AMENITIES.

LATER in the day we had brilliant sunshine, and the weather was equally fine when I turned out at midnight to take a meridian altitude.

We were now in great want of game; the last of our dog-food would very soon be used up, and we must therefore be prepared to sacrifice some days to shooting; but it would be better to wait till we reached the good game country a little farther south.

We went pretty fast southwards along by the land. After driving four or five miles, we turned up a valley, and eventually worked our way up a ridge, which promised us a good view across the wide-stretching plains. We very soon discovered a polar herd down in the valley, a mile or so away from us, and immediately made out our plan of campaign. We found it necessary to drive back a little way, in order to get down into this valley, and we also took the precaution to put the over-runners under the sledges, for we knew that when the dogs winded big game, after such a long interval, they would probably take boulders and everything else on their way.

The over-runners were well fastened on, the ammunition was taken out and put in a handy place, the guns were looked to, and off we started. At first the way down to the valley appeared rather doubtful, but we set off full speed down through some sandy hollows, and, our loads being light, we managed very well. At the bottom of the valley there was deep loose snow, in which the dogs floundered about a good deal. They were so clever that they well understood what was likely to follow these manœuvres; they had been sniffing and looking about all day just as eagerly as we

ourselves, and when at last they got wind of the animals, it was plainly no more than they had long expected.

Since we had last seen the animals they had lain down in a little hollow. We noted the position of some of the sand-ridges, but as we approached them they changed their appearance, and were exceedingly misleading. I then drove over one of these sand-hills, thinking the herd to be behind the nearest of them, but I suddenly caught sight of the animals' backs down in a gully a couple of hundred yards away. I pulled up, overturned the load, and did not let go the dogs. I meant to advance a few steps and pick off three or four of the animals, hoping that then, when there were no dogs to worry them, the rest of the herd would disperse.

Schei, with his heavy load, had fallen behind; the first man in the convoy, being pioneer, has always to have a lighter burden. I therefore reached the field of battle long before my comrade, and my intention of letting Schei do the shooting, which he was very keen about, did not come to pass, as I thought it too risky to delay.

I took my rifle and began to stalk the animals; but I had not gone more than ten or twelve steps in front of the dogs before they began to howl and whine with impatience. The oxen suddenly jumped up, and there was nothing for it then but to let go the connecting lanyard, and off ran the whole team. As soon as the animals saw the dogs, they formed a square.

I took my time going up to them, in order not to be out of breath when I was going to shoot. Before I reached them, two of the oxen had already broken out of the square, and were fighting the dogs on their own account. A little while afterwards I saw, to my astonishment, that the square had half dissolved, and the skirmishes with the dogs were becoming fiercer and fiercer. There were thirteen animals altogether, some of which were young animals, and four were very small calves, only a few weeks old. Every one of the full-grown animals took part in the attacks, even to the young animals, and several of them made simultaneous sorties. I had never seen anything like this before.

With such hot-tempered animals as these it was as well to have

a steady hand, so that each bullet might find its billet; otherwise things might go wrong. It was not possible to aim at the oxen, so I had to take what I could get. At the same moment that one of the cows was lifting her head I fired, and the animal fell dead to the ground. I had to wait before I could sight for the next, and the barrel of my gun was pointed in divers directions before the right moment came. Then there was a report, and the animal remained lying on the spot.

The skirmish with the dogs was becoming hotter and hotter every moment, and the herd now scattered and rushed after them like infuriated devils. I was already beginning to grow used to the idea of losing the dogs, or, at any rate, of their being so mutilated that I should have to make an end of them; and I was very sorry I had not waited to take off their harness and traces. The oxen kept treading on the lanyards, the dogs were thrown over, and their pursuers were able to get hold of them and toss them. Not one of the dogs escaped being repeatedly sent several yards into the air.

I stood long, pointing my rifle east and west, before I could get a shot at the two oxen which had been the first to take up battle; but when I saw my opportunity I gave one a shot in the middle of the head, which dropped it on the spot. But I had still the worst of the beasts to tackle—the big bull, which had been the first to leave the square. Compared with him, the others were not in it; he had literally run amuck.

At last he came towards me, and I was able to aim, although he did not lift his head as high as he might have done. All I could do was to try. I gave him a good reminder, and the steam gushed out through the wound in his forehead. He then thought the time had come to bethink himself a little, fell on his knees, and so remained for a while. Possibly he came to the conclusion that the shot had passed under the brain, for he sprang up, and went after the dogs with perfect Berserker fury. I expected to see daylight through them very quickly after this. The bull seemed to be possessed with the Evil One himself, and less thorough-paced dogs than mine would have been mortally wounded, instead of getting off with some gashes and scratches.

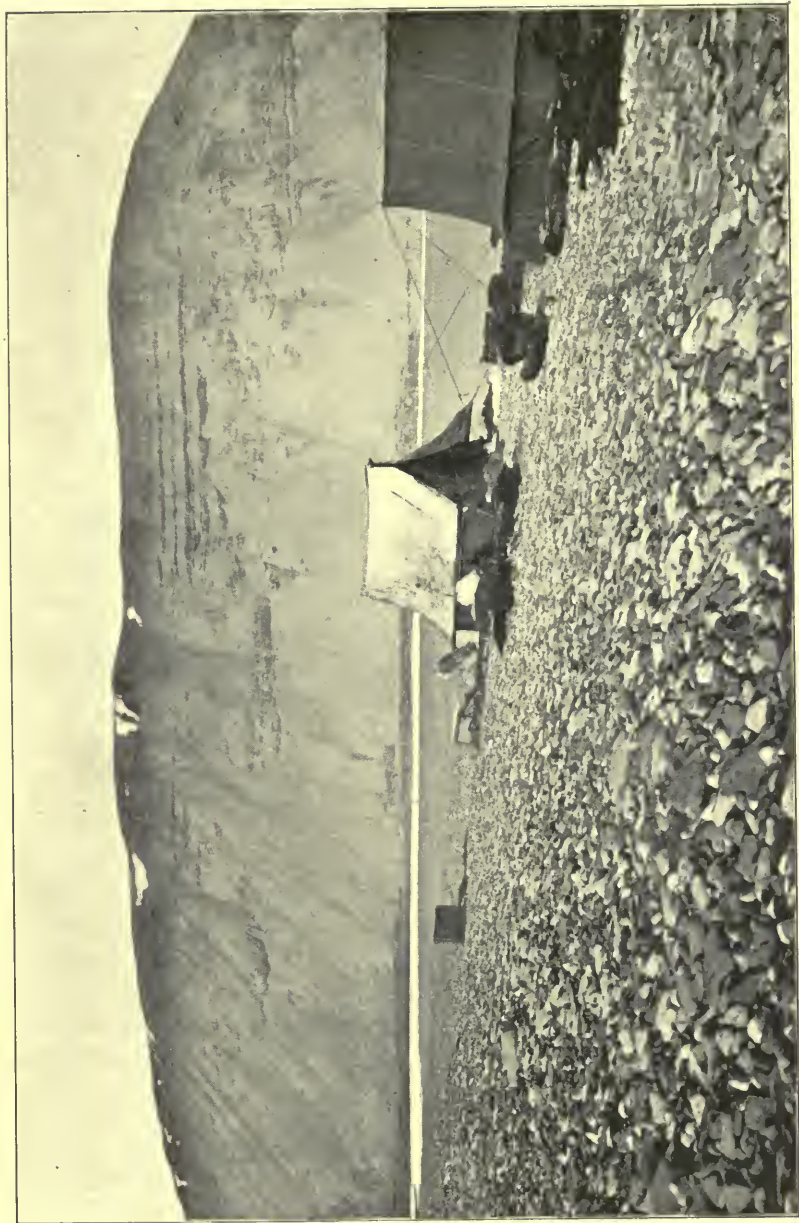
They capered about in front of the maddened animal, sometimes afraid, sometimes savage. Then three or four of them collected together for a special concerted attack. They got the bull down on to some level ground under the hill, so that I lost them from sight, and there they evidently punished it freely. They tore its hair off in large patches, till it had hardly any left, but still they could do nothing with it. Now and again it made a digression towards me, and I began to expect a personal attack, but it never came within range.



AFTER OUR LAST SHOOT ON SCHEI ISLAND.

If there was to be any likelihood of my keeping my dogs, my best course was manifestly to fire at some of the other animals. Meanwhile Schei came up with his camera, and took snapshots of the four cows, which were still standing about. They were more peaceable in their demeanour, and kept with their calves, which were still very helpless.

But suddenly the bull appeared on the scene again, this time in grim earnest. It bore straight down on us, evidently not with pacific intent; but Schei fired at it with his Express, and its days were told.



OUR STATION AT YTRE EIDE. AUTUMN, 1901.



Whether Schei's dogs had bitten their traces off, or had broken loose, I do not know; suffice it to say that they came running up at this juncture, but interested themselves considerably more in the fallen than in the living cattle. Although we had not thought of killing more than three or four animals, we were obliged to shoot them all, for it was almost impossible to catch the dogs as long as there was living game about. We could not approach the animals, as they would have attacked us, nor would they go their way. Several of them, however, were wounded. The calves, poor little things, had not the sense to be afraid; they stood, helpless and alone, and allowed themselves to be caught like tame animals.

We at once began to skin and open the animals, and cut the meat from the bones, so that we need not take the latter with us. It was a lengthy business, and one which we did not finish that day. When we were thoroughly hungry and tired we pitched the tent and cooked some dinner. It was the Seventeenth of May and Whitsun Eve, consequently a 'double event,' and we therefore thought we might allow ourselves to be as festive and comfortable as circumstances would allow. We spread a large ox-skin on the ground, pitched the tent upon it, and placed another large skin outside the door, so that we could take off our boots and be comfortable in the open air, for there was brilliant sunshine, and only a few degrees of frost. While the cooking was going on the tent-door stood wide open, and after a sumptuous meal of broth, meat, marrow-bones and other delicacies, we lighted our pipes and lay comfortably in front of the tent, half hidden in the long soft hair of the skin, while our pretty Norwegian flag waved from the roof its greeting from the land and folk we held so dear.

What a change for us! Weeks of toil and hardship, combined with increasing anxiety as to the fate of our dogs, and now here steeped in unalloyed wellbeing! It is true we had not a single drop of spirits of any kind, but we really did not require any. One might look long for a pleasanter Seventeenth of May; and our dogs shared the joys of existence with us. They revelled in the delicious warm meat, until they could hardly move their jaws.

As is often the case, May 18 was not nearly so pleasant as May 17. A complete change of scene had taken place, and there was high wind from the west with driving snow; but we had to go on skinning and cutting up the meat before it was frozen. It was raw work skinning in such weather, and still more raw cutting away the meat from the bones. What a glorious appetite the dogs had! one could hardly help feeling envious of the way they set to work. One team was moored to the carcase of an ox, and the other had an enormous heap of meat lying close by them. All they had to do was to eat, and they did it religiously.

The whole of Whitsuntide we remained lying at the same place, and with the same bad weather. It was not till Wednesday, May 21, at six o'clock in the evening, that it was any use to think of driving down the valley and out on to the sea-ice. The snow was such good going after the violent wind that we made quick progress, although our loads were heavy. But what a change there was in the dogs! They seemed like different animals, and went at a gallop southwards. But we knew that in their surfeited condition we must not drive them too long at a time, and we therefore stopped at midnight.

One of my dogs, 'Rex,' was making his second long journey at this time. He was still quite young, and had always been very timid, never defending himself when the others fought him, which they did continually. It was the fashion in my team to hound this unfortunate animal, although I could see that, taken altogether, he was the strongest of them all. The one who treated him worst was, of course, 'Svartflekken,' ever a brutal tyrant whose greatest pleasure was bullying his colleagues. But that night there was a revolution; the real cause of the disturbance I never found out; suffice it to say that 'Rex' would endure no more, and the two began to fight as hard as ever they could. 'Svartflekken' at first was somewhat disconcerted, but he soon rose to the situation, and did all the biting he was capable of. But 'Rex' was young, had sharp teeth, and the suppressed anger of many a long day to vent. The other dogs did not know what to think when they saw 'Svartflekken'

being so gloriously thrashed; possibly they were as pleased as we were. When he had had the punishment he richly deserved, we separated them; it was no advantage to me to have him killed. But hardly had we done this than 'Rex' flew at him again, and was so beside himself with wrath that we had to tie him up alone. He had had no idea before of his own strength, but when it dawned upon him what a matador he was, he became so savage that he flew at everything and everybody.

CHAPTER XXXII.

BLAAMANDEN AND BAY FJORD.

By eleven next morning we were again driving southward; the weather was brilliantly clear, and almost too warm. The snow was heavy, but we got on well. It is remarkable how four days of good feeding can increase a dog's strength. And how they ate! Although they had had no food at our last camping-place, they still felt the effects of their greediness. Later in the afternoon they began to be so tired and short-winded that we thought they had better digest in peace, so we settled down, as early as three o'clock, under the lee of a large iceberg on the north side of Skrællingodden. 'Svartflekken' had had a worse thrashing than we thought; he limped on three legs the whole time, and was in such a bad way that he had to be tied up by himself.

Just as we were going to start, about three o'clock in the morning, the wind suddenly sprang up, and there was soon a regular gale from the west. The snow was loose and heavy, and we could hardly see a hand's-breadth in front of us through the drift. It was not until we reached Skrællingodden, and were able to drive alongside the land, that we could do much; but there again we came on to hard shining ice, the wind blew worse and worse, all the time on our beam, and we were obliged to take to the ice-foot so as in any way to keep our course.

As we were driving along we came across a hard-packed drift sloping from the ice-foot down on to the bright ice. We tried to hang on to the drift as well as we could, but a violent gust of wind came just at this moment and swept us sideways across the ice. It was simply impossible to stop ourselves. The dogs kicked and clawed on to the ice with their feet, but we were carried

farther and farther from land, and it was not until we were stopped by some drifts that we were able to control the sledges. But here was a pretty state of affairs; how were we to bear up towards land again? Here and there across the ice lay small snow-drifts, and the only thing we could do was to coast inwards from drift to drift. It was only occasionally that we could get a purchase on the ice with our feet, and more than once we had such a narrow shave that I thought we should not reach land.



THE 'FRAM' IN HER LAST WINTER QUARTERS.

We arrived there, however, at last; though our tribulations were not ended therewith. Farther south we found ourselves in a quantity of sharp sand and pebbles, which was hardly the sort of going for German silver. We were extremely careful, but still we rubbed holes in the plates, and had to repair them before we could go farther. Later in the afternoon we camped in a sheltered bay, where we were at peace both from loose and drifting snow. We had a lovely day there, and could enjoy to the full the mild brilliant weather. We tinkered at the repairs and improved on them a little, broke up again in the afternoon, and pitched our tent

in the morning outside Blaamanden. As far as it was possible we now took observations at every stopping-place southward.

The wind was raging outside the promontory, and there was little comfort to be got out of standing there handling instruments for longitude and azimuth observations southward, and northward to Smörgrautberget; still less pleasant was it to turn out at mid-day to get a meridian altitude. Farther south we kept close under the east shore, only a few yards from the crack, as Schei was anxious to see something more of the great plains which began here, just east of Blaamanden, where the coast trended about due east. Blaamanden itself is of some height, but it falls abruptly away towards the east, and has very much the appearance of a gigantic up-standing rock continuing northward in the shape of a narrow border of mountains.

In many places up on the precipices were animals grazing; sometimes in herds, large or small, though now and then we saw a solitary old ox or several oxen which had joined company. Once we observed four oxen together, which eyed us unperturbed as we drove quickly past. But we had meat enough now, and had no reason for disturbing their pastoral peace.

In the small hours of the morning we camped in a river-valley, which cut straight through the level country. On the plain just above us a polar herd of twenty head was grazing, and Schei, who went some hours' walk inland, saw these same animals almost wherever he went. I dared not go far from camp, as the dogs would be sure to go off hunting on their own account if they winded game.

In the evening we went on southward, alongside the land in rather heavy snow, and camped next day due north of Maiodden, where we took a series of observations. We had had good weather on the whole since our Seventeenth of May camp, and no snow had fallen; the last few days had been even brilliantly fine. During the daytime the dogs had actually found the warmth too much for them; they puffed and panted, and their tongues hung far out of their mouths.

Next day we made a short halt at our old camping-ground, a little way north of Maiodden. Schei, as usual, began to rummage about, this time not among rocks or Eskimo ruins, but on the



FROM NEAR BJÖRNEBORG.

site of our old camp, and did not stop before he found a knife which I had lost on the way north.

After we had pitched our tent in the evening at the extreme point of Maiodden, being much engaged with our cooking, we heard the dogs giving tongue. They seemed in no great hurry, so we knew that it was not a bear. Schei crept out, put on his glasses, and viewed the situation at closer quarters. He then thought it wisest to provide himself with cartridges, went to the sledges, and began to get some out. I asked him from inside the tent if anything was the matter. 'Yes,' answered Schei, 'if you want to have a shot at a wolf, come out.' I crept cautiously out, and saw two wolves a couple of hundred yards from the tent, but before I could get hold of my gun they had retreated. I tried sending them a couple of bullets, but the range was long and the light bad, and we soon saw them disappear among the hummocks. We saw from the tracks that the animals had come from the south, and had kept alongside the crack the whole time.

We finished our meal and lay down to rest, but I was not able to sleep a wink, and at eleven I turned out and observed. It was a quiet peaceful night. A solitary goose was cackling up on land; of other sound there was none. Schei went a trip ashore to find the goose, but in vain. After midnight we turned in again, but even then I could not sleep, and began to work out an observation. It was full daylight inside the tent.

About two o'clock we heard the dogs again. I was not long in going out, and stealing towards the sledge, where, as luck would have it, my rifle had been forgotten, and then saw a pack of eight wolves attacking my team, which were tied up the farthest off. A couple of them were so near that 'Lillemor,' who had the longest trace, was showing her teeth, and there were not many inches between their noses every time they snarled at one another.

When the assailants saw me they retired a little to one side. Then Schei came out, and we sat down outside the tent-door to wait for 'Greylegs' to come nearer. But they were not so foolish. They went farther and farther away, and the range grew pretty long. Schei was determined to make me try a shot at them, and as it is not difficult to persuade a person into doing what he

wishes to do, I blazed away at the nearest of them, but shot low. The animal merely stood still after the report and glared at us, without moving from the spot. I then tried again, with a fuller sight, and this time it began really to spin round in the usual manner, and soon fell. I thought for a moment of giving it a second dose, but came to the conclusion that it was not necessary, and moreover, I was afraid of alarming the rest of the pack. The wolf, however, had not been lying there very long before it got up, walked a few steps, and then fell again. We could have run up to it and shot it at once, but we felt so sure of our one wolf, that we sat and waited for the others to come back. But we reckoned without our host. We waited and waited, until we felt certain that the others would not return, and then we went after the wounded animal, but it was gone, never to return.

On arriving at the camp we had noticed two polar herds up a little valley. They appeared to consist of four cows, each with a calf. The seven unwounded wolves, having to leave us with stomachs as empty as when they came, now went inland, taking a line northwards towards the plains, and came across these animals. The meeting was evidently quite unexpected on both sides, for the air was so still that they could hardly have got wind of each other, and we could see that the wolves actually started when they caught sight of the oxen. They stopped short, and stood still a while, probably making out their plan of attack. Finally they formed a ring round the nearer of the animals, but not one of them would approach closer than two or three hundred yards. There they took up their stand, and as long as we were about—and that was for several hours—they kept at their music without let or hindrance. Such music, too! A long-drawn, weird howling, as if a knife were being driven into them every time they uttered the sound.

We were most curious to see what would happen. We thought that the four cows with their small calves must be a splendid opportunity for the wolves, but the cows did not seem to be at all impressed by them; and, as a matter of fact, were so indifferent that they did not even take the trouble to get up. When later on the wolves appeared to think of approaching the other herd, which was

somewhat scattered, the animals drew nearer together, but did not form a square. It would appear from this scene that the polar ox stands in no great awe of the wolf; at all events, when it does not appear in greater numbers than on this occasion. On the other hand, it would seem as if the wolf has a good deal of respect for the oxen. We went a short trip ashore to look on at closer quarters, but both parties remained *in statu quo*, and the only result of our pains was the filling of our ears with the wolves' dismal howling.

As far as I was concerned there was no sleep to be had that night. We fried beef, talked, and enjoyed existence as best we could, until we started taking observations again at half-past four. We left about six, and at first followed the track of the wounded wolf. It had gone towards land in short marches of twenty or thirty paces, lying down between each march to rest a while. We let wolves be wolves, and shaped the course across to Bay Fjord.

All the paraffin we now had left would not more than fill the 'Primus.' We could not run to any great extravagances with this, but the cold time was over, and there was nothing for it but parsimony. We might, moreover, expect to shoot bear or seal, and even if the oil did come to an end we could get on without it. Things might be bad if we happened to be weather-bound, but there did not seem to be any likelihood of this. We therefore decided to follow our hearts' desire and drive up to the head of Bay Fjord.

The weather was warm, and the dogs then are always slack, even when they are in good condition. As we approached the opposite shore the snow became very loose, and they had to have the whip.

Across the sound were several new bear-tracks, and we saw, among other things, that near an iceberg a bear had done some extensive engineering work, which it had probably taken several days to accomplish. It had made excavations in various parts of a snow-drift, in order to make a passage down to a seal-hole, though, poor fellow, his calculations had seemingly come to naught.

In these warm days it was not easy to find a dry camping-place

out on the ice, so as soon as we could we took refuge on the shingle above the ice-foot. We had meat galore, which had to be used up, and it would have been bad indeed for us if, with our ravenous appetites for beef and our short supply of paraffin, we had not found a quantity of *Salix arctica* on the spits of land where we camped. There were branches in plenty to be had, both green and dry.

In the evening of May 29 we reached the interior of Bay Fjord, whence it was seven or eight miles farther to Tommen, the mountain which Bay and I had passed on our journey in 1899. I easily recognized the valleys and mountains we saw at that time; and again, as then, was much impressed by the majestic mountains on the north side of the fjord. We were both seized with a burning desire to drive to the head of the fjord, and on across the isthmus to the known waterway on the east side of the land; the more so because we thought that if we could reach Brevoort Island, or the west side of Pim Island, we should find the mail which Peary had brought up thither in 1899. We had been explicitly told in Foulke Fjord that it had been put ashore there, as an American expedition intended to winter there in 1899-1900.

But perhaps it was better to be wise in one's generation, and not start off on a wild-goose chase. The season was far advanced, and, judging by the weather, it would be as much as we could do to reach the ship, even if we drove the shortest way back.

Close-handed as was Nature with vegetation in general in this fjord, she was generous enough with *Salix*. In the bed of the river we found, at different heights, according as the water had been high or low, one patch after another of what this year, especially, was such a welcome plant. What we did not use on the spot we took back with us in a sack.

The last night of our drive up Bay Fjord we saw a long stripe in the snow stretching right across the fjord. We wondered much what this could be, and at last came to the conclusion that it was a broad run made by the hares; but what could such an assemblage of hares possibly be doing in this barren fjord? They had come from the south, had gone straight across the fjord, and, after reaching land on the north side, had kept some forty to fifty, and sometimes

two to three hundred yards from the shore, but the whole way the path was equally distinct, and we could see it for a distance of several miles. Whether it was an enormous flock of hares which had changed their grounds for the year, or whether it was made by hares running backwards and forwards, we could not make out; but it was very remarkable. There was not a single track outside the run, and they had followed their leaders without a single break.

Next morning, May 30, we took our observations and drove out of the fjord. The snow was heavy going, but we reached



IN STENKULFJORD. A FIND FROM ESKIMO TIMES.

our old camping-ground, on one of the points in the outer part of the fjord. The thaw was going on with express speed. When we had camped here two days before, there had hardly been more than a single little bare patch to be seen, just big enough for us to pitch the tent on; now there was scarcely any snow left on the point, and we could find cooking water everywhere out on the ice.

We reached camp late that evening. It blew hard during the night, and frying beef-steaks out of doors, with twigs and heath for fuel, was a cool pastime. Farther on down the fjord the going was hard and good, for the snow had melted together, and did not drift, no matter how relentless was the wind. We drove most of the

time on bright ice, with small pools of water here and there. The seal lay about, sunning themselves, all the way down the fjord, and small herds of polar cattle were grazing not far off on land; but of meat we had enough. We exercised self-control, and would not allow ourselves to be tempted to shoot anything, either ashore or afloat.

In the afternoon of May 31 we passed Grethasöer, in Bay Fjord, and camped at 'Hatöen' (Hat Island), which was a splendid place



A GOOSE SHOOTER.

for observations. Tent-rings and meat-cellars told of Eskimo visits in former times. We both had a good deal to do here, and it was late in the evening before we returned to camp. Schei brought back a leash of hares, which he had shot in the mountains.

It blew so infamously that evening that many a time we expected the tent to be blown to pieces over our heads.

At half-past nine in the morning of Sunday, June 1, we took a line across to Storöen. It was still blowing, but we did well, as the snow had melted together. What most hindered our progress were the large and many drifts, like short choppy waves, which tried, though in vain, to stop our way. When we

were able to turn south, and keep under the island, we went very fast, with the wind hard astern. The thaw, however, was rather advanced here, and the crisis, as far as the dogs' feet were concerned, began. On this account we were obliged, in certain places, to keep far from land.

Some distance up the valley, on the south side of the island, we discovered a large herd of polar cattle; a good deal of disturbance seemed to be going on, and they looked as if they were fighting, at any rate they were running after each other in a very excited state. I never saw a fight between polar oxen, but no doubt in the pairing season they have their internecine battles. As we wished to see something more of this, we pulled up for a while, but the wind was coming straight down the valley, and I was afraid that, with our light loads, the dogs would run away when they got scent of the animals. I had no desire for this, and so we pushed on again. When, at half-past two in the afternoon, we camped at the cache, on the south side of the island, we had driven nearly twenty-five miles since the morning. We took our ordinary observations, and Schei went up into the mountains.

We remained lying at the cache for twenty-four hours, as, besides our ordinary duties, there were various repairs to be done. After that we took an oblique course southward through the sound, steering on the west shore. The snow was good, though under the west shore it was a little loose; but the weather was unpleasant; the biting wind seemed literally to blow through us; and we could hardly keep ourselves warm, although we often ran beside the sledges.

After having driven for a time in one spell during the day, we now began again to drive for six hours at a time, and rest for twelve. This arrangement made a considerable increase in the mileage during the week.

Thursday, June 3, we reached our old camping-ground out at Björnesund, took our observations, and crept into the bags. But one's peace is at the pleasure of one's dogs, at any rate on a sledge-journey; this, unhappily, is a rule which allows of no exception, and of which we had sad proof during these days and nights. The dogs were as mad as they could possibly be, wove their traces into

inextricable tangles, and were ready to tear each other to pieces at any moment. I had to go out to see to them over and over again.

At midnight, between June 3 and 4, we drove westward again, as Schei wished to examine some glaciers in Uvefjord. The ice was bright, and there was a stiff wind, so it is needless to say how we went: dogs, sledges, and their appurtenances were swept and carried along, and we had hardly time to breathe. Across the sound ran a rather broad lane, which in ordinary circumstances would have been bad enough, but now caused us the greatest possible trouble. This was again the dogs' fault, who would obey only one voice, and that the great one—love.

Whereas in Heureka Sound, where there had been a great deal of wind for a long time, hardly a sign of any thaw was to be seen, in Uvefjord, which was sheltered, it was so advanced that we could hardly get along. We had not gone half a mile up the fjord when our way was marked by spots of blood from the dogs' feet, but since we had started to drive inwards we did not mean to give up until we had reached at any rate the outermost glacier.

Our baggage was wet through, but matters were still worse when it came to crossing the broad land channel in order to reach land. As soon as the dogs discovered we were going ashore, they became absolutely unmanageable. They made a rush for the channel and began to swim it, with the loads and sledges behind them. The only thing I could do was to kneel on the top of the baggage, and try to balance the tall load as well as I was able. How many times I was within an ace of falling into the water I cannot say, but I know that the load was more under than above it. Happily it was good drying weather, so that, though some of the things were wet through, it did not so much matter. We just spread them out on the sand, and they were very soon dry again.

While Schei measured the glaciers, with the sweat of his brow, I took my gun and walked up the large stretches of sand. I did not see a living thing of any kind, either geese or anything else, that could be shot, but I soon saw that the freshets were at their height in there. There were waves on almost every stream. Schei described the valley he visited as one of the prettiest places he had come

across up here, as far as vegetation was concerned. There was such a quantity of heather in it, that he could almost have imagined himself at home in a mountain valley in Norway. That others had also found the valley to their liking was evident from the numerous tracks and traces of polar oxen; and it was the playground of ptarmigan and hares in numbers. He brought back a hare with him as a specimen.

CHAPTER XXXIII.

HOME TO THE 'FRAM.'

AT five o'clock, on the morning of June 5, we started homewards. Thick 'shell-ice' had formed on all the puddles and pools along the fjord, and this in places bore the dogs, though at others it let them through to some little depth. Between all these pools, too, the slush was thick and bottomless, and the teams sank in deeply. In a word, the going for the first part of the way was almost impracticable both for men and dogs.

We took a course for the pass or neck across Ulvingen, and as we approached the island later in the afternoon saw, close under land, a bear with two cubs coming slantwise out towards us. We could see that the bear was manœuvring to wind us, and I therefore took my precautions and tried to hinder it from doing this. But the dogs were so footsore and absent-minded that I could not get enough speed out of them. No sooner had the bears scented us than they took to their legs, and hid themselves behind some hummocks. I went after them, but then they set off west. The dogs, however, pulled so hard that I supposed they had observed the animals, and I therefore let them go, but I was mistaken; they ran a little way, and then stopped altogether. They behaved so indescribably badly at this time that I was well-nigh distracted by them, and all I could do now was to catch them, one by one, and harness them again.

We drove up the bay, and brought our loads across the neck and down to the sound on the other side. A little way from land no thaw had yet taken place. Here we made good progress, and three miles or so outside the neck found a first-rate camping-ground up on the crack. While Schei was collecting specimens,

and I occupied taking observations and in various other ways, the dogs lay quite quiet, and remained so nearly the whole time we were there. They were so footsore that they did not know which foot to stand on, and thought perhaps that they might as well lie where they were.

On Friday evening, June 6, we were off again. We had flattered ourselves that we should reach Björnekaplandet in one spell, but the dogs' feet and the going were too much for us, and we had to bite the sour apple, as we say, and camp out on the drift-ice. On Saturday, the 7th, things were still worse: the snow was like scum. Without any warning the dogs disappeared to the tops of their backs in the slush, and we who were struggling along beside them on 'ski,' more than once sank in to far above our knees. Needless to say, we were hardly dry-shod when, at midnight, weary and tired out, we reached Björnekaplandet.

At seven on Sunday morning we were hard at work observing. After breakfast Schei went off across the plains towards the ridges in the south-east, and I went with him for some way to see if there was enough snow on the country south to make it possible for us to give up driving on this terrible sea-ice. I found that there was probably enough snow for us to drive across the low country, and that, though possibly it consisted only of a very thin layer, there was herbage beneath it the whole way, and, therefore, it would not be a serious matter if we scraped over bare land now and again. Sledges travel very fairly well on grass, and our loads were light. Moreover, there were so many sandbanks jutting out from the land, that in order to get on to the sea-ice we should have to make a long circuit west, and for this we had no desire. The only thing which made us hesitate about driving over land, was the numerous rivers which were now in flood, and came foaming down the slopes. However, we both thought that there must certainly be some means of crossing them.

I had just started on my midday observations near the camp when a flock of geese settled down not far from the tent. The first flock of the year could not have come more opportunely. They seemed a little frightened at their own temerity; for when I came up with my rifle they were rather wild, and I had

a good deal of trouble in getting a couple of them. I skinned them and put them in the cooking-pot, and when Schei came back dinner was very soon ready. It was not more than one fat goose apiece, certainly, but all the same he looked very much surprised, and had to settle his glasses well on before he would acknowledge the fact. He had not seen a single goose, though he had noticed



FROM SIMMONS AND ISACHSEN'S TRIP. SPRING, 1902.

a number of grazing polar herds, large and small; altogether about sixty head of game.

We took our time at this camp, and let the dogs recover a little; my team in particular being very footsore. As there was less thaw-water about at night, we did not start till eleven in the evening, and we then took a line for Lille Bjørnekap. Things went very well at first; even the rivers were not above our knees. Farther south there was less snow, and it was hard work toiling across the bare land, but down in the hollows the going was good, and taken altogether we had nothing to complain of.

We passed one flock of geese after another without stopping

for them. But then a large river brought us to a sudden standstill ; all our attempts to cross it were unsuccessful, and this was reasonable enough. It was a good hundred yards wide, the bottom was covered with ice of the most slippery kind, and the stream was so swift that it looked like a single continuous waterfall. We had no objection to getting a little wet, but to start off here with sledges and dogs would have been certain destruction. Once more we had to try the Lapp's advice and 'go round' the river. To go up to its source would perhaps have been rather a long excursion, but it was only three or four miles to the sea, and there must be an end even to this monster river.

But things were not as we had imagined. Nearly everywhere the land was bare, and on the ice-foot lay water several feet deep. We drove backwards and forwards several times, and went a long way round before we were able to ford it, and even then the dogs had several times to swim. We followed the crack southwards along the sea-ice, but such a thick fog came on that we could hardly see each other. We drove without knowing where we were going, and ended by landing on a sandbank, where we decided to camp, hardly as much as a mile from the place where we had first been stopped by the river.

Schei had now been driving ahead at times, as his dogs were less footsore than mine. 'Lillemor,' 'Rex,' and 'Veslegulen' pulled nearly as well as ever in spite of their tender paws, but 'Svartflekken' and 'Gammelgulen' had quite given in. I had tried making sailcloth socks for the dogs, but they were not a great success, as the spring ice cut holes in them at once.

If only we could reach Store Björnekap, the dogs should have a good rest; and there too we should have to procure food for ourselves, as the meat was nearly all gone again.

With much toil and trouble, and after many detours, we managed to wind our way along the ice-foot, past the mouths of all the big rivers, where as a rule the ice-foot was eaten away. When we saw geese, which happened several times, Schei generally did the shooting. We had better luck this year; the geese were not so hard to shoot as they had been the year before.

At five in the morning of June 11 we camped at Store Björnekap, at about the same spot as the previous year. We still had one allowance of dog-food left, but we thought we would wait before feeding the dogs, as perhaps a seal might be so amiable as to allow itself to be enticed out when the sun rose higher. We therefore set quietly to work on our own breakfast, and after we had done this thoroughly, and again peeped out, we actually saw three seals on the ice. Equipped with gun, sledge, and stalking-sail I set off after them.

It was a lovely quiet day with brilliant sunshine, and according to our ideas baking hot. The water was high, and the slush deep for long distances together, so that it was not an easy matter to stalk the seals; but I had plenty of time, and certainly this was needed. In the background, up on the shore, sat Schei watching the course of the engagement through the glasses, as eager as any general.

I approached two seals which were lying side by side; seal never keep such a good look-out as when there are several of them together, and they can take turns in watching. These animals too were harbour seals, and they are much more wary than, for instance, the bearded seal. However, luck was with me, and the larger of them remained on the spot. It was a fine, big fellow; I got it up on to the sledge, and brought it to camp. As soon as it was skinned, the dogs had their breakfast; first a very large portion of blubber, and then meat to their hearts' content. When they had eaten their fill they lay down and basked in the sun, and did not move the whole day, even when we let them loose so that they could go where they liked.

We climbed Store Björnekap to get a view of our surroundings, take some observations, and draw a sketch-map. When we saw what sort of going awaited us across the big bay, we decided to lie still for a couple of days, so that the water might have a little time to cut itself a way out.

We both made repeated attempts on the seals, but mostly for the sake of sport and not because we any longer required dog-food. At this time of year the dogs are satisfied with very little, and since their last huge meal they had hardly eaten

anything at all. A change of weather set in, however, and the seals jumped in and out of the water, and were never quiet.

On one of his many excursions Schei came across a large expanse of sand, which was sown with pretty little lakes; a regular goose district. But in the confusing light he suffered the same disappointment that many a good shot has had to put up with before him, and many will hereafter. The bag was not in proportion to the number of shots fired. He came back to camp in a frame of mind that was anything but ecstatic. At midnight, between the 12th and 13th, we started to drive across the bay, with a course on one of the large sandbanks on the south side. The dogs were arrayed in sailcloth shoes with double soles, and for the moment were the coxcombs of Björnekaplandet. The going was bad beyond description. The ice was entirely covered with a prodigiously thick layer of loose slush, so that, in spite of our 'ski,' we often sank in knee-deep, and the sledges were sucked in so tightly that it was all we could do to loosen them again.

We tramped steadily on the whole night, and, after a tiring march of ten hours, we at last reached the nearest sandbank. Our rest was short, for I was anxious to reach the ship, where there was a great deal to be done before our departure. If the weather had been as good in Jones Sound as it had been here, dredging could now be begun.

Our knowledge of the country stood us in good stead when we started again, for thick fog hindered all view. We now took our way straight across all the large sandbanks, and, as a rule, only came down to the sea at the inmost corner of the bays; but even there we did not attempt the sea-ice, as there was still enough snow for us on land, and this saved the dogs' feet. The rivers, however, gave us a deal of trouble and forced us out on to the ice now and again, notwithstanding. We thought it best to camp a mile or so from the place whence we meant to strike across country to Gaasefjord, as it was not easy to see with certainty how the land bore in such flat country, and with the mist sometimes as thick as a wall.

Just before we stopped for the day I became aware of something white, away by a sandy hollow a hundred yards off. I

pulled up, had a good look at the animal, and soon came to the conclusion that it must be a very large bear. I was not slow to overturn the load and tell Schei. We at once agreed that he should shoot it. He overturned his sledge, got out his rifle in a hurry, provided himself with cartridges, and set off, little suspecting the dismal fate in store for him.

One's shooting experiences of various kinds may at times seem absolutely incredible to others, and hence the doubtful reputation such narrations have acquired. It happens less often that one experiences things which one has the greatest difficulty in believing oneself. But listen to this. With the utmost caution, with his gun ready, and his eye fixed inexorably on the bear, Schei advanced to the spot. Meanwhile the bear sat wagging its head, but keeping a good look-out, it appeared, for when Schei had come some twenty steps nearer, it rose and flew away! I have no liking for people who gape and stare, but I think I may be excused if I stood gazing after the bear with my mouth open, as it soared away, with long proud strokes, over our heads. It did not seem either as if it was the first time it had taken flight; it flew as well as any bird, which after all was not remarkable, for it was a glaucous gull. I felt decidedly crestfallen, and the shooter himself was no less so. When we came to ourselves again, Schei swore with such conviction as I had seldom heard him do before, and I, I regret to say, followed his example.

On June 15 the fog was as thick as the day before, and we all but drove past the place whence we meant to strike across country, but Schei saved the situation, as he recognized some of the sand-hills. Our way now was an exceedingly devious one, in order to avoid the worst of the rivers and streams. At Storsjöen we had to take a more northerly route, across clay and stony land. We, of course, made use of the wooden over-runners, but where the clay was stickiest we had to put both the teams to one sledge, and hauled with them ourselves, like ponies. In these circumstances we had not much time to notice the fresh reindeer-tracks leading east, up at Storsjöen. Our quarters for the night were a little south of the watershed, and on June 16 we worked our way south, through Gaasedalen, which was practically free of snow.

We made the most of any little snow-drift which we happened to come across along the bed of the river. It would have been hard work indeed had not our way been chiefly down hill.

We reached the fjord-ice at high water, and there was nothing for it but to wait for an hour, until the water fell sufficiently for us to take to the ice-foot. Meanwhile, we thought we would fry ourselves some fillets off the geese we had shot on the way down the valley, but it proved that the dogs had eaten the geese to the last mouthful, and we had to content ourselves with warming up some stewed pemmican, which had been left in the cooking-pot after our morning meal. When we were just off the spot where our forge had stood the year before, we saw a camp up on land. We drove nearer, and outside the tent found a team of dogs and inside it the inhabitant, sleeping sweetly. It was Bay, who was collecting insects. We invited ourselves to breakfast, drove off again soon afterwards, and reached the ship about half-past one, after seventy-seven days' absence.

This was the second long journey I had made with Schei, besides all the shorter trips. We drove many a mile together and weathered many a storm, and always got on well with each other. Often Schei had the hardest job, but he accepted it all with patience. We had many a spell of hard work, but of pleasure, on the whole, still more, and I shall always remember these two trips as particularly enjoyable. They were through interesting parts, and a prolific game country.

CHAPTER XXXIV.

OUR COMRADES' EXPERIENCES.

ON board we found everything as it should be. The work had gone all the time its even steady way. What was most apparent to the eye, was the broad continuous street of sand all along the ice to the outer point near Borgen. It had been completed a week before our return.

As I have mentioned before, Baumann and Raanes parted from Schei and myself up at Hareneset on April 9. Notwithstanding their light baggage, they did not make much progress, as the dogs were spent and the going slow. When they camped at Björnekaplandet in the evening the dogs refused so much as to look at another bit of the inevitable stock-fish. This news was probably trafficked round Björnekaplandet in the course of the night, for by four o'clock the next morning a bear came marching up towards them, and allowed himself to be shot for the public good. It had apparently crossed land and water to be in time; its coat was covered with ice, and lumps of ice as big as a man's fist were hanging from its jaws. This is quite a phenomenon.

With their dogs well fed, and themselves provided with meat, they took a line for Lille Björnekap. They passed many polar herds on the way, numbering from eight to fifteen animals, but they had neither wish nor need to enter the lists with them. They also saw reindeer, altogether about twenty head, scattered in herds of from four to five animals. They shot two, and took with them the skins, and also the meat. The dogs were now in splendid condition, and went quickly south, across Norskebugten, although the weather was rough. Towards the end of the trip

Baumann had a touch of snow-blindness, so the mate took the lead, and they still made good progress.

On April 16 they returned on board, and at once started on preparations for the trip to Beechey Island. On April 18 Isachsen, Fosheim, and Hassel came back from their trip east. According to arrangement they had left records of the expedition on Cone Island, and different places in Jones Sound. As soon as they



'ADAM' AND 'EVE' MOULTING.

returned Isachsen and Bay began to prepare for their mapping journey to North Devon.

CONE ISLAND.

On April 1, Tuesday in Easter week, Fosheim, Isachsen, and Hassel went to Cone Island to put up some cairns, and leave records for the guidance of a possible relief expedition. Accounts with charts giving the 'Fram's' position, and the most certain and ice-free route through Jones Sound, were put in cylindrical tin boxes and soldered down. They were to be built into cairns at Stormkap, Baadsfjordnuten, South Cape, Skreia, and Cone Island.

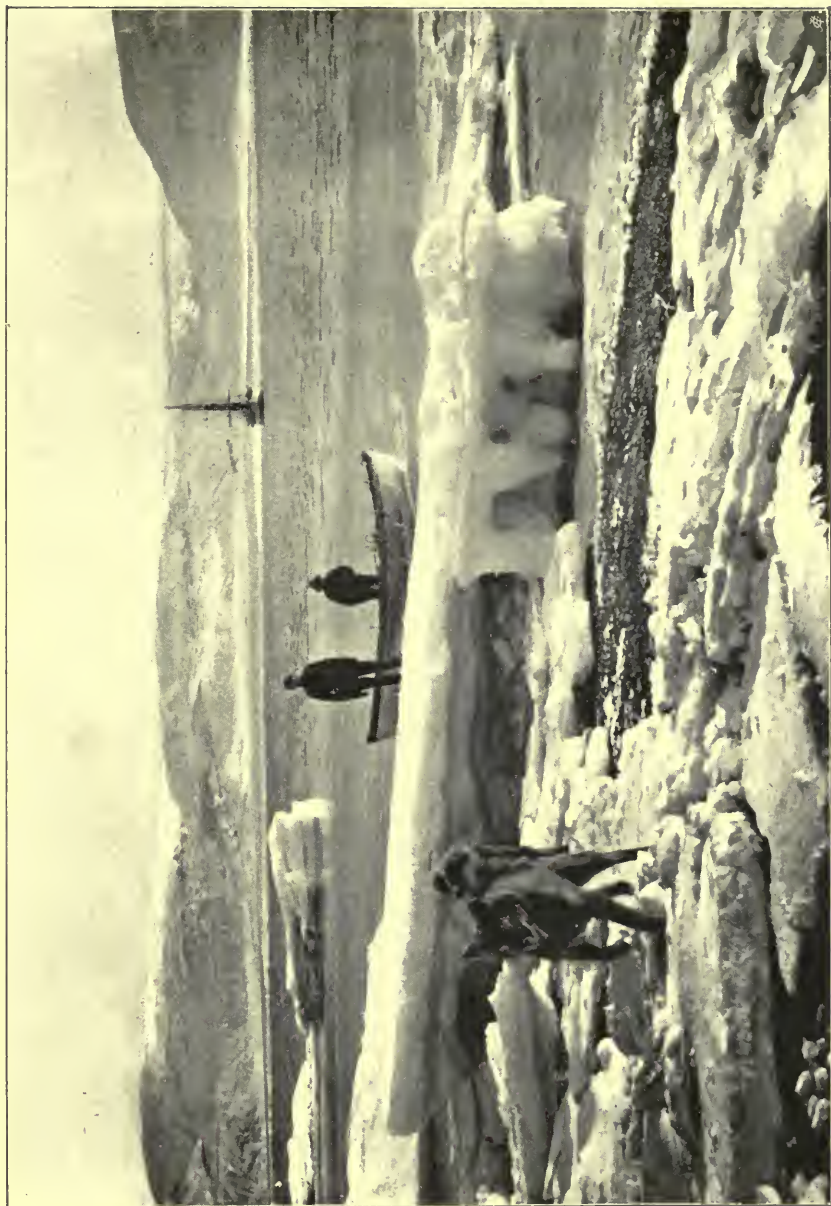
Crossing Muskusfjord on April 2, the sledge-party experienced strong wind from the north, with fog and drifting snow. The worst gusts swept the dogs and loads far across the ice. Later in the afternoon the wind fell somewhat, and in the evening they built the first cairn on the west side of the outermost point of Baadsfjordnuten, just above the crack.

Isachsen, who was going on a mapping expedition to North Devon, would pass here again a little later in the spring, and therefore they decided to leave behind as much as they could in the way of dog-food and provisions. They cached about 330 lbs. in different places, the greater part being at South Cape. Here, too, they built their second cairn, about a hundred and fifty yards from the shore, on the east side of the cape.

As they were starting for Cone Island on the morning of April 5 they saw a large bear coming straight towards them. Fosheim, who was driving Bay's team, loosed his dogs, as they were considered the best, and away went dogs and bear as fast as their legs would carry them. Hassel threw himself on to Isachsen's sledge, and they both drove after the bear as quickly as they could. Fosheim took charge of Hassel's masterless dogs, which were whining with impatience to set off. But they were given something else to enliven them other than hunting; they had to drag their own load and Fosheim's too, and were treated to a sound thrashing into the bargain, for, as a matter of course, the start could not take place without a violent scene between 'Storebron' and 'Basen,' who were fighting at this time for mastery within the team. 'Storebron' came off victor from the battles, and was able later to enjoy possession of the throne and harem.

Meanwhile, the dogs had not pluck enough to bring the bear to bay. They followed it side by side for a couple of miles east, without attempting an attack. When it was so tired that the steam poured forth from its mouth like a cloud of white smoke, it tried, as a last resource, throwing itself headlong down into a great crack in the ice. But there it was soon done for. It was a large old he-bear, so heavy that it took all three teams to drag it up from the fissure.

On the succeeding days the snow was heavy going, and the



BETTER ALONE ON SHORE THAN IN CHAINS ON BOARD.

weather bad, with thick fog and falling snow, but all the same, they reached Cone Island in the afternoon of April 8, and camped on the south-west corner of the island. The island is excessively steep on all sides. Towards the south-west, however, a rather low point of land jutted out, and on this were fox-traps and tent-rings.

On the top of a rock about fifty feet in height, connected with Cone Island by a low isthmus, was a cairn, probably set up by Sherard Osborn in the fifties. They examined it carefully, but found no record in it. The following day Fosheim and Hassel built a new cairn at the same place, but somewhat higher than the former one. Meanwhile, Isachsen went for a walk, and shot a big bear in the sound between Cone and Smith Islands. Either for shelter from the weather, or in order to steal unawares on a seal, it had burrowed a hole in a hollow where it could lie absolutely hidden, with its head clear of the drift for the sake of the view.

While Isachsen and Hassel skinned and cut up the bear, Fosheim put up a bar with a black ball at the top, and a rotating flag of iron tin, on which was the following inscription: 'Cone Island, April, 1902, "Fram," 76° 39' N.Br., 88° 59' L.W.' In the cairn, at the foot of the bar, he put his spectacle-case, containing Isachsen's visiting card, on which were written the names of the other members of the expedition, and the 'Fram's' bearings.

It was not until April 10 that the weather cleared, and they were able to take the necessary observations; they started homewards the following day, taking with them specimens of the Archaean rock. On the return journey they put up the fourth cairn at the southern point of Skreia, and the fifth at Stormkap, where the Eskimo tent-rings provided most of the building materials. The cairn was put up in a very prominent position, on an isolated crag on the west side of the cape. The party were on board again on April 18.

THE JOURNEY TO BEECHY ISLAND—THE CUTTER 'MARY'—
THE DEPOT SPOILED.

On April 23, Baumann, Fosheim, and Raanes started for Beechy Island, provided with rations for thirty days, dog-food for twenty-four days, nine gallons of petroleum, and a hodo-meter for the rear sledge. They took with them one team of six and two teams of five dogs.

They started by way of Nordstrand, then on across the sea-ice north of North Kent, and from there to Arthur Strait, which proved to be a fjord. The going was heavy and difficult, and several 'ski' were broken. They shot two reindeer, saw a wolf, and came across tracks of bears, wolves, and foxes.

On April 28 they drove south through Arthur Fjord, and reached the head of it at a distance of twenty miles from the eastern point at the entrance. Then they passed a lake, and camped up on land in order to reconnoitre. There they came across a cairn built by Sir E. Belcher in 1853, and found a record stating that he had come there from Jones Sound. Across the low land due south they saw the sea-ice a good two miles away.

At this place they made a small cache, and on April 30 went on again in a southerly direction, following the crack from point to point. The hodo-meter showed a distance from Arthur Fjord to Wellington Channel of rather more than five miles. Soon after the noonday halt they shot a bear, and while they were in the midst of skinning it, another one came along, but time was short, and they let it go.

It was snowing next day, and they were rather late in starting; but at ten o'clock they had to set off whether they would or no, for 'Moses' broke loose and went off after a bear. While Fosheim and the mate were driving after the bear, and making an end of it, Baumann had to let go the rest of his team in order to get 'Moses' back. On May 3 they saw four bears, three of them at one time. One was shot and the meat cached. On May 4 they were at Beechy Island.

It has long been known for certain that Beechy Island is not

an island at all, but that it constitutes the south-west corner of North Devon; from a distance, however, it has the appearance of an island, as it is connected with the mainland by a very narrow low isthmus.

Soon after their arrival at Beechey Island they observed a small bear, and Baumann loosed his dogs. They were probably tired, for they were unable to stop it, and disappeared with their quarry into the pressure-ice, where driving was impossible.

Next day, May 5, they took the usual observations, and while Fosheim was following the track of the dogs, Baumann and Raanes examined the English depot. The depot itself no longer existed. Of the house, only the frame remained, with the lower rows of the boarding with which it was covered. Packing-cases, barrels, and tin boxes lay scattered about. The packing-cases had been broken to pieces, most of the barrels had been cut across, and all the tin boxes that were seen by the search party had been opened by means of a sharp instrument: a knife or tin-opener. Nothing fit for use of any kind was to be seen; everything was empty and ruined.

The cutter 'Mary' can only be described as a wreck, although the timbers were well preserved. The deck beams had been sawn off, and the deck broken up. The mast had been sawn across about three feet above the deck. In build she was planked diagonally, and outside the planking was sheathed with zinc, but on the port side both the sheathing and the planking were very much destroyed. One lifeboat was still there, but it was not sea-worthy, although it was in considerably better condition than the cutter. Every single watertight bulkhead, however, and every single air-box had been broken or hewn in two. On the shore lay a number of large blocks, but nowhere was anything discovered that could possibly be described as rigging or cordage. Everything in the shape of sailcloth and oars had entirely disappeared. Snow was lying here and there, and round the house especially there was a good deal of it, so that possibly some things may have escaped the notice of the party. Round the vessel, however, there was no snow, and, according to Baumann, there is very little likelihood of any cordage or oars being still there.

Everything gave the impression of wanton destruction, but whether Eskimo or seal-catchers had been the perpetrators cannot be said with certainty. In order to do this a minute examination would have to be made when the place was quite free of snow.

During the afternoon Fosheim returned to camp, without having seen either bear or dogs. It was not till ten o'clock at night that the tramps came home, ravenously hungry and tired out.

On May 6 they started homewards in changeable weather, which, however, was chiefly unfavourable. Baumann was snow-



BAY AT HIS MORNING TOILET.

blind for a couple of days, and the expedition lay to. Nor could they discover any passage on their way north which might entitle Arthur Fjord to its old name of Arthur Strait. About a mile from the head of it a bay cut into the land in an east-north-easterly direction, but Baumann did not think that there was any sound there either, as its southern outlet, in such a case, would have a quite different direction from that given in the charts.

They shot two harbour seals and two hares on the way home, and saw a wolf and several bears. Towards noon, on May 20, they came on board again. From Gaasefjord across to Cape Osborn, some way north of Beechey Island, the snow was loose all the

way, and they had to use their 'ski' nearly the whole day. From Nordstrand across to Arthur Fjord there was hardly anything but pressed-up autumn ice, whereas Arthur Fjord itself had not broken up the year before.

From Arthur Fjord to Cape Osborn there was old ice the greater part of the way; farther south there was a good deal of pressed-up autumn ice; under land there were polynias, but at every single cape they found themselves in bad pressure-ice.



THE PRISONERS ON DJÆVELØEN (DEVIL ISLAND).

There was water on the ice north of North Kent, and once on the way to Nordstrand they would have certainly gone through if they had not had on 'ski.' They had remaining eleven days' dog-food when they reached the 'Fram.'

NORTH DEVON AND STENKULFJORD.

Of the journey to North Devon Isachsen writes:—

'On April 12 we were off again. This time it was Bay and I who were to try to gain some idea of the north coast of North Devon. We were provisioned for thirty-five days.

‘The first thing we did was to drive into Baadsfjord. We thought it would be too bad if this fjord was the only one not to be mapped. Baadsfjord is some few hundred yards wide at the bend, but becomes broader towards the head, where an enormous glacier debouches. On the east side are lofty mountains. The vegetation was exceedingly sparse, and there was not a trace of any animal to be seen on land. We saw several seal on the ice that day sunning themselves by their holes, and, put shortly, spring was in the air. It was astonishing to have such a high temperature as 21° Fahr. (−6° Cent.) as early as April 26.

‘It was miserable travelling at this time, and our progress was slow. As I did not think I got sufficiently ahead of Bay, who was driving after me, I took the “King bag,” as we called a large bag containing a number of smaller ones with dry food in them, and flung it back on to his load. Bay now began to slow down, so much so that he thought himself warranted in shouting: “I think the devil himself’s in this bag, Isak.” I thought it very probable, as the weight of the bags contained in the “King” was not much over thirty pounds.

‘On May 1 we drove from South Cape in a south-south-easterly direction. Most of the icebergs in Jones Sound will no doubt always be found in the part between South Cape and Cone Island. A stranded colossus, about one hundred feet high, seemed familiar to me. It was strikingly like an iceberg which we had involuntarily been about to make acquaintance with in 1899. We were pushing our way through the ice in rather thick fog when I, who was at the helm, shouted: “Iceberg on the port bow!” The word of command, “Hard a-starboard!” at once followed from the crow’s-nest, and we escaped in the nick of time without rubbing noses.

‘We made a short halt at this iceberg, and to pass the time we each gnawed at a stock-fish. Bay hungered for meat, and, like the lion, said: “It is dinner-time, and no nigger (bear) in sight!” Bay often expressed himself rather “tropically.”

‘We saw several fulmars (*Fulmarus glacialis*) flying west. They were probably going a reconnoitring trip to their old breeding-grounds.

‘We came under North Devon east of “Cape Sparbo.” In

1900, when we left Havnefjord, we had seen this peninsula at a distance, and imagined it to be an island, being unable to see the low isthmus behind it. It proved now, however, to be really a peninsula. East of Cape Sparbo a great number of glaciers shoot down towards "Bræbugten," or "Glacier Bay," from the glaciated interior.

'We continued westward, the land by degrees becoming lower, and west of "Bjørneodden" (Bear Point) we saw no ice-cap. Here the granite was succeeded by sand and limestone mountains. There were numbers of bear-tracks along the land.

'The snow was as bad as it could be, and the ice was much pressed up. I used my "ski" when the ice was not too bad, while Bay stamped after me in his shirt-sleeves. The going was so bad that one could hardly get along at all. About midnight, on the 8th, we were awakened by a terrific outcry from the dogs. There was no mistaking what was going on; we heard them rush past the tent like a growing avalanche. We ran out, and of our ten dogs there were only two remaining. Bay resolved to go after them in hopes of shooting the bear, which, however, neither of us had seen, as the weather was thick. The dogs, on seeing the bear, had all made a rush at the same time, so that the loop in the ice gave way. Three dogs from the other team had bitten through their traces and joined company out of interest in the cause.

'As my dogs were bad hunting dogs I did not think they would stop the bear, and I was afraid they might follow it for a long distance; while if the bear fell foul of them it could do them a good deal of harm, as the whole team was kept together by the same lanyard. On looking at the tracks I saw that the bear had been about a hundred yards from the dogs when they began to give tongue. As there was nothing to be done I tried to go to sleep, but was not very successful. At six o'clock I began to make pemmican lobscouse, so that there might be something hot for Bay when he came back. I made the stew, went out, looked round through the glasses, looked at my watch, but no Bay came. Everything was still and silent. The thought that perhaps something had gone wrong alternated with the thought of the

absurdness of the situation. I seemed to be playing time-keeper in this interesting race, and I was much excited as to who would come in first, Bay or the "other" dogs.

'At seven in the morning I saw a little black spot moving in the west. That must be Bay! I went in and began to get the food ready again, but as he was a long time coming I went out once more. After searching for a long while through the glasses I descried a dot as small as the time before, but now it was in the north. At last, at nine o'clock in the morning, Bay entered the tent a good first.

'He had followed the tracks north, west, and finally south; and on his way back, as it was still so thick, had gone the same round again, following the tracks to be quite certain of finding his way. He had passed some of the dogs, but could not induce any of them to follow him. At five in the afternoon "Ola" and "Skrika" came in, after which the others arrived at intervals of an hour, though "Indiana" and "Basen" were away for forty-eight hours.

'On the night of May 10 we had the same story over again. A bear crept up to within a few paces of the dogs under the lee of some hummocks, and when the team observed it they sang out, broke loose, and gave chase. The second team did not get loose. When we came out we saw the bear ahead, with the team full cry after it. In the course of the afternoon four of the dogs came back, but "Svarten" did not reappear.

'The country between Björneodden and "Cape Svarten" (Black Cape) is the lowest on the north side of North Devon. Farther west it rises again somewhat, and averages 900 to 1200 feet in height.

'We had not yet had a single sunshiny day on North Devon. Always calm weather with gently falling snow. Through the mist we could see the sun shining on the north side of the sound. The snow was so loose that it would seem as if there had been no wind here the whole winter. From "Cape Skogn" to "Skruiodden" (Pressure-ice Point) the ice was of the worst kind, and as nasty as any I had yet driven in. There were pitfalls in it just as there are in boulder-strewn land covered with freshly

fallen snow. A glance at the map will show that the ice on "Björnebugten" (Bear Bay), and between South Cape and Cone Island, must as a rule be very much broken, on account of the wind and direction of the currents, the prevailing winds in Jones Sound being north-west and south-east.

'Bay toiled immoderately during these days. Being inexperienced as a "skilöber," he could not use his "ski" and look after the load at the same time, so in order to keep up he had to have one of my dogs. I drove first with the other four. It was wonderful that he managed to get on at all, but it was work calculated to take it out of one, and I remember that one day he fainted twice from over-exertion. It will be seen from this what an enormous advantage it is to be able to use "ski."

'We could now see the whole of the coast northward, as far as Baadodden, where we had been the year before. The ice here was as good as impracticable, and we therefore took a line for Stormkap. "Björnebugten" must be a favourite haunt of the bears, for there were tracks nearly everywhere; in certain places literally beaten tracks.

'We camped on Stormkap in the evening of May 17, in fine sunny weather, with a temperature of 5° Fahr. (—15° Cent.), and thereafter we celebrated the day with "full music," as Bay called it; in other words, by producing the best we had with us. We had at the same time to keep Whitsun Eve, and the day of our arrival in King Oscar Land.

'The following day there was a violent head wind, with driving snow, and it was impossible to make any way against it. We tried to, but the dogs and sledges went backwards instead of forwards. It was not until May 21 that we could go on. There were several landslips during these days between Stormkap and Gaasefjord. We came on board on the 22nd, about noon.

'We were surprised during the evening by the arrival of "Svarten," who, as aforesaid, disappeared after the attack of the bear. Strange to relate, he was in good condition, and not in the least hungry. He had probably followed our tracks to the ship, and had procured himself food by taking a leaf out of the bear's book.'

We had long thought it would be of great interest if Simmons or Schei could go up to 'Stenkulfjord' (Coal Fjord), to examine the large beds of coal which Baumann had discovered there in the spring of 1901. It was now decided that Simmons should go and Isachsen accompany him, but it was thought that the expedition ought to be made as late as possible in the spring, so that the ground might be reasonably free of snow. It would, however, be no easy matter to drive across Björnekapeidet (Bear Cape Isthmus) in summer, for as a rule there was very little snow there.

On May 25 the two started across Björnekapeidet; there was not much snow, but the weather on the whole was favourable, and the results of their trip good. They examined the coal-beds, and returned with a quantity of pieces of coal, containing the fossils of plants. In addition to this they brought back with them some well-carved articles of bone, some of which looked like children's toys, while others were things for use, such, for instance, as swivels. They found them while they were digging in the ground a little way above some tent-rings. The things were lying in a heap half covered with moss, and looked exactly as if they had been placed there in a bag, which had crumbled to dust during the course of time. They had shot three polar oxen on the way, of which they skeletonized one.

They reached the 'Fram' on June 9 after ploughing back through deep loose snow.

CHAPTER XXXV.

THE LAST SUMMER.

THERE was much to be done for us all during the course of the summer.

First of all the dredging-boat, which was lying out at Ytre Eide, had to be put in order as quickly as possible. It required a new false keel under it, and a new rudder. We measured the rudder of the sister boat which was lying on the shore close by the ship; Fosheim set to work on the rudder itself, Nödtvedt made the iron gear, and Raanes the tiller. On June 19 the mate, Fosheim, and Stolz with two teams drove out to the boat. The repairs finished, it was to be driven to the edge of the ice, and put ashore at some spot near there.

When Schei had finished developing the photographs from his last journey, he, with Olsen and Nödtvedt, went down the fjord to collect fossils, first to Ytre Eide, and then to the large valley on the east side of the fjord, not far from the isthmus.

Peder and Hassel put things to rights in the hold forward, and the ox-skins were taken out to be aired and looked over. Before the making of the sand street, Peder, Nödtvedt, and Stolz had built cairns, in places which had already been indicated for them, to be used, when triangulating. Isachsen now measured a base line, and began to triangulate the whole length of the fjord, helped by Stolz. Simmons and Bay collected plants and insects. This year again Fosheim took regular measurements of the thaw on the upper surface of the ice. On the best days this would melt as much as three inches in the twenty-four hours; at other times it hardly melted at all. The sand street looked as if it would be a source of joy to us all; and it was not many days before we were able to row all the way down it.

After some days' absence, Fosheim, the mate, and Stolz came back. The boat had been mended and taken to the west cape, where it had been left at the mouth of the fjord. The condition of the ice was about what might be expected after the stubborn southerly winds. Jones Sound was packed full of drift-ice as far west, south, and east as it was possible to see.

The rigging had slackened very much, and it was absolutely necessary that this should be set before we started; all the



A REST. ESCAPING FROM DJÆVELÖEN.

running gear had to be shortened, the sails seized, and so forth. On this the mate, Peder, and Hassel set to work; Baumann and I helped them as much as we could, but on fine days Baumann's first duty was his magnetic observations. Add to this the capture of some seals—they so often came up on the ice that they provided us with abundance of dog-food—a little goose-shooting, and shooting of other kinds in the evenings, chiefly for the sake of amusement, and it will be seen that we were not idle.

On June 26, between one and two in the morning, Schei came hurrying on board, and woke me up. He had brought back Olsen,

who, poor fellow, had had another misfortune. It was very hard that he should come in for accidents, in this way, directly he left the ship for a trip; doubly so, for he had looked forward to going like a child.

This time it was his right arm which was dislocated. I turned out, got hold of Fosheim and Simmons, who had helped me before when I was bone-setter, made a good fire in the after-cabin, got the invalid on to a box, and began to undress him. He was very unhappy, and sat there, looking as white as a sheet. I asked him if he would like to get very drunk this time, too, but he would not hear of it.

It is extraordinary what strength is required to reduce a dislocation. Two of us pulled as hard as we could; we thought we must be dragging his arm to pieces, yet, notwithstanding, our first attempt was unsuccessful. On our second trial we heard the redeeming crack. Then we bandaged his arm, and Olsen was unfit for work for a long time. This was cheerful indeed, with the voyage home before us, for he was our first engineer!

When the arm was in its socket, Olsen told us that he had gone shooting after supper, having set his mind on some sea-fowl which were splashing in a pool outside the crack. He had shot some of them, and was just going to climb over a pressure-ridge, when he rolled down it, head over heels, and fell into the water. What he did in the lead he could not explain, but at any rate he saved his gun, though he was on the point of being drowned. After he had scrambled out again he became aware that his arm was dislocated.

On July 4 Isachsen and Stolz returned on board after having sounded the fjord. They said that, as far as they could see, from the parts of the fjord where they had been, Jones Sound was quite free of ice.

Ever since early spring the wolves had been tied up out on deck. They were in a thriving condition, and played with each other all day long, and when they had a chance with those on board as well. A game with one or other of the crew, in particular, was mutually appreciated; but it was impossible to fatten them, notwithstanding that they were the favourites of all

on board. They were treated to delicacies of every sort, and many a slice of good meat found its way down their throats. But although they had ravenous appetites, they never became fatter than what would be called good condition. The fox, on the other hand, was so bad-tempered that nothing could be done with him; he showed his teeth and snarled if anybody went near him.

If any dredging at all was to be done this summer it was necessary to make haste, so it was decided that Bay, Simmons, Isachsen, and Peder should start on Monday, July 7, and Schei and I would go with them to the boat, with their provisions and equipment. They were to go first to St. Helena, and then to North Devon, to dredge round Cape Vera. After that they were to try and get up through Cardigan Strait, and about July 20 or 21 were to be back in Gaasefjord. If the 'Fram' had not got out of the fjord by that time they were to row northward along the east shore; and if they were stopped by ice there, they would have to walk overland, and would then be fetched.

The thaw was proceeding with giant strides when we drove outwards on Monday the 7th. We were obliged to go out almost into the middle of the fjord before we could pass 'Kadaverelven' (Corpse River), although a day or two beforehand we could have walked with safety almost anywhere. The ice between the point at Indre Eide to the point at Ytre Eide was good, though very weak. In certain places the water in the pools was so deep that it reached to the calves of our legs when we waded across them.

In Jones Sound we saw a quantity of ice; but when Schei and I turned back the next day a wind sprang up from the north, and we hoped that this would carry the ice out to sea. We did not go very quickly, for the dogs were footsore and the ice abominable. At the point inside of the isthmus the fjord-ice was nothing but a thick crust, which we just managed to dash across. Among the stones on Indre Eide we collected some fossils. Here and there a bearded seal was lying on the ice, but without a stalking-sail any attempt to capture one would have been useless. From Kadaverelven, across the fjord, the ice was so weak that we had to keep to the ice-foot along the west shore till we were a little way the other side of the river, and could venture out on the

treacherous ice where, so to speak, new pitfalls opened every hour. The lane astern the ship ate its way farther and farther outwards, and we now had river water close by the 'Fram.'

After finishing his magnetic observations, about July 10, Baumann set to work to make tarpaulin covers for the hatches, mast-hoops, and various other things which had to be done, before the ship was ready for sea; nearly all our mast-hoops had been spoiled. Fosheim nailed them on, and had a good deal of other carpentering work on his hands as well. Among other things, he made a number of oars; and also some fiddles for the cabin tables, curiously enough, without for a moment feeling seasick. Schei brought on board the fossils he had collected farther up the fjord that summer; he had now finished his geological examination of this part of the country.

He and I then began to pack our library, which was of considerable size; in fact, our work just now chiefly consisted of stowing away everything loose which might be expected to roll about when we were under way.

From July 12 the ship was only kept back by a strip of ice, and a fresh, steady south wind would free us at any minute. So we sounded along the east shore, to see where we could anchor, and found that it was everywhere deep; quite near to land, as much as thirty or forty fathoms.

On Tuesday, July 15, we got loose, anchored in thirty fathoms of water, and put out thirty fathoms of chain. The whole mass of the ice on the inner side of the sand street was in drift, and we might well have gone out through Trangsundet, but as yet we could do nothing in the outer part of the fjord, which was still covered with ice.

On the 16th, the boiler was filled from a brook, where the water was clear, and free from grit and deposits. The boats, which had been on the water for some time, to tighten, after their long stay on land, were now taken on board. In a word, the 'Fram' was rapidly becoming a ship again; she had long enough been something half-way between a warehouse and a dwelling-house.

The whole mass of the ice was now broken up into floes of greater or less size. Often the current pressed these together

round the ship so that the dogs, which had been taken ashore when the ship was freed, saw their way to paying us daily visits. It was often difficult for them to get ashore again, but they insisted on coming out to us, greatly as they disliked the water, and despite the duckings they took now and again as they jumped from block to block, with a long swim at the end.

Two or three days after we got free we were able to row inwards as far as Middagskollen, whence the fjord was ice-free to its head.

Schei went a trip in the shore-boat to 'Kollen' and Skrabelalden, where he shot some geese, ptarmigan, and sea-fowl, and after that went on to Borgen. Inside of this there was little ice left, but outside the floes were closely packed, having probably, for the greater part, been driven into the fjord from Jones Sound, by the south wind.

On July 19 the breeze freshened, and very nearly drove us ashore. On Sunday, the 20th, all hands were busy with the clearing work, and later in the evening we lighted the fires, as the ice was jamming hard. By four or five in the morning steam was up, we shipped the dogs, and tried to heave off. We went full speed ahead, and heaved at the anchor chain as much as the winch would stand, but the nip was so severe that we only got in an inch now and again, and often had to go down on the ice to saw the floes across under the bows. We worked long and hard before we succeeded in getting up the anchor, and could begin to force ourselves from land. We aimed at a large land channel on the west shore, but had to give it up in mid-fjord, and remained lying by the side of one of the bigger floes, drifting in the strong wind some way up the fjord along with the pack. We had nothing to fear, for we were lying well clear of land, and Baumann and I divided the night-watches between us so that the rest of the crew might get some sleep. They had been working since early morning.

With a slacker wind next morning we went up into the lane by the west shore, followed it out to the point north of Indre Eide, and anchored in a little bay inside the point. But twenty-four hours later an enormous floe, which was drifting out of the fjord with the current, laid itself straight across the bows, and we had



HOMEWARDS FROM STENKULFJORD.

to change our place. As we anchored, two or three walruses climbed up on to the ice near the ship. Fosheim shot one of them; the animal was skinned, the meat brought on board, and we steamed out of the fjord to bore ourselves into the pack. We lay for several days drifting backwards and forwards abreast of 'Borgenodden' (Borgen Point). We did not feel much of the south wind, which, however, was blowing pretty hard both north and south of Trangsundet; and all the way down the fjord the ice was so tightly packed that often two or three floes were forced one on top of the other.

There we lay, grinding round and round, out in the narrowest part of the fjord; at times with steam up, so as to keep clear of land, but without being able to ram our way through. We had advanced a couple of miles when, on July 26, a stiff breeze from the south-east sprang up, and the ice slackened under the east shore. We instantly forced our way up into the land channel, and followed it outwards, narrow though it was. Although we were hard put to it in some places out by the points, we crept on till we were abreast the Eskimo ruins, just above Ytre Eide, but there we came to an utter standstill. We could not anchor, for we knew the ice would drift towards land as soon as the wind dropped, so we lay to on the outer side of a very large floe.

As we expected, when the wind went down later in the night, the ice drifted landward, and remained in such a compact mass that we could not take a boat ashore without dragging it up on the ice. Although the prospect of shooting something enticed us into the valley, we had to give it up, it was too hard work.

This Gaasefjord is a very remarkable place. It had to wait long before strangers found their way to it, but, once there, it knows the art of keeping its guests to perfection. Last year the ice never broke up at all: this year, when the same host opened the drawing-room door for his guests, they were seized by the collar and held fast in the hall. 'I will never do this again,' said the boy, when he chopped off his left hand. I, at any rate, shall take good care not to set foot in Gaasefjord again.

But the dredgers? They were nowhere to be found. Probably they were beset at some place farther west.

On Wednesday, July 30, the wind freshened, the ice drifted quickly out, and we with it. It was now a case of getting up steam, for we were likely to have a tussle before we cut our way clear of the point to the south of us, where all the way along the shore there was a barrier of large grounded blocks of ice. I saw that we should be forced against these, but hoped there would be enough water to enable us to brush past southward. But suddenly we were seized by a large floe, which swung us round with irresistible force, and for a while we had the pleasure of drifting



‘HOLD YOUR JAWS, DOGS!’

backwards. Then suddenly the stern touched the bottom; the ice-blocks whirled out with impetuous speed; and we were pressed higher and higher aground.

So there we were. The tide had just begun to fall. There was no question of our being able to push off; in fact, the masses of ice were in such drift that we could not even put out a warp. We set to work at once to move a number of things, so that the ship should have a list towards land; and for safety's sake put a couple of good stout hawsers round the mainmast- and foremast-heads, and hauled them taut with the help of a tackle and the

steam-winch, to prevent the ship from falling outwards. The vessel only touched at her stern, while the bows were afloat, and at low water on the bottom. After the lapse of a few hours there was hardly any ice left in the fjord, and, had we been clear now, we could have taken a good spurt. When it was nearly high tide the vessel swung round again, and lay with her stern to the current. The watch below were called, and we started to carry a warp; but when with great trouble we had rowed out the whole of the heavy steel cable, and were just going to let go the anchor, the 'Fram' floated off as coolly as if it was the most natural thing in the world. We at once steamed west towards the western cape in Gaasefjord, to look for the dredgers. They had not been there. The sledge they were to use, if they were compelled to go along the ice-foot, was standing there untouched. They must therefore be still farther west. We then followed a narrow land channel, but right out in Hvalrosfjord we were stopped by the drift-ice, which came drifting east at terrific speed, and only got back to Gaasefjord by the skin of our teeth. At Ytre Eide we fetched the boat, and moored to an ice-floe out in the fjord. We kept a good look-out from the crow's-nest, but saw nothing of our comrades; and when, on the night of July 31, the ice came drifting violently into the fjord, the mate, Hassel, and I rowed ashore to Ytre Eide, and, for safety's sake, left some provisions and petroleum there.

This was a bad time; we could not anchor, and, as we were obliged to drift backwards and forwards with the ice, there was nothing for it but to have steam up, or we might risk running aground. However, we resolved to try to anchor, and sounded our way to an anchoring-place of twenty-five fathoms of water, a little south of the ruins, put out a number of chains, and extinguished the fires.

Since leaving winter quarters we had kept the ordinary watches, and, according to good old sea custom, had had coffee at middle watch. We had now only a single watch on duty at a time, but he, of course, had strict orders to turn us out when a dangerous floe or anything else of the kind was bearing down on us. At the same time, the coffee was stopped, and tea substituted for those who liked it.

There was a strong current in the fjord, and the ice had always a predilection for the east shore. When the pieces of ice came sailing in and out with the current and tide, they had a simply infamous way of always making the round of the bay, and trying to carry us with them; but we had taken marvellously good root. If the floes were big we did indeed drag for some distance, but we always escaped accidents.

We were now able to go ashore without difficulty, and there was generally somebody out every day, either on the look-out, or to shoot a stray goose, eider-duck, or hare. Jones Sound presented a hopeless spectacle. Ice, nothing but ice, as far as eye could see, and hardly a single lead—the south-east wind took good care of that. A little before midnight on Saturday, July 25, Hassel, whose watch it was, came running down and turned me out with the news that an enormous floe was bearing down on us. The rest of the mate's watch were immediately turned out, and the second anchor got ready in case the chain we had out should break.

The floe came sailing along, gave us a slap, and swept us inwards with irresistible force; it hooked itself well to us, this floe, and had no intention of letting its catch go. There were not many feet of water under the keel when its grip slackened, and we were freed. Between three and four in the morning, when the water fell, the same floe came slinking down the fjord again, again caught us, and out we went. This time it was bearing straight down on the peninsula outside of us, and nearer and nearer it drifted. Well, well, the 'Fram' would probably stand this shock too; but anyhow we had to be at our posts. Both the watches on deck! The hawser round the big ice-blocks stranded yonder! When the hawser was taut, we paid out some more chain, and thus got the ship clear of the floe and nearer up towards land.

When the floe, its mission unaccomplished, had floated past, the engineers were turned out, and with all hands on deck we began to heave off. We were tired of the disquiet of our old lodgings; nor would they do in the spring floods, so it was best to move. We then moored the ship by the stern, close inshore, with only a couple of feet of water under the keel at low tide; we should then have the bottom as a refuge in case of dire

necessity. We put a stout steel cable round a large rock a little way up on land, and it needs to be a firm rock not to be dragged away when the ice presses. The cable is pretty sure to hold, for cables are strong things. Here, at any rate, we could lie in peace without risking the anchors and chains.

The stubbornness of the south wind this year was something remarkable. However, if it did not stop blowing before, it would do so when the cold set in. The question of the dredging fellows was one which exercised us more. They were dangerous waters there in the west, and, what with the strong current and all this ice, we did not know what to think. My only comfort was that Peder was with them; he knew all about ice and current. Probably they were under arrest in some place, waiting for a more favourable wind.

On August 5, as Schei was looking across towards Ytre Eide with the glasses, he saw something moving out there. It was not long before he made out that it was two human beings, and, therefore, it was to be assumed that they were two of the dredgers; they had also hoisted a flag. I need hardly say that our joy was great when we saw that they were alive. At eleven o'clock, the mate, Hassel, Stolz, and I went off in a boat. We had first to row a couple of miles up the fjord to get into open water. Many a time advance was cut off, and then we had to take to our old way across the floes. We landed a short distance inside the point where the dredgers had been seen. They received us with a salute, and the mate returned the compliment.

The dredging boat had reached St. Helena the day after we had said farewell to the party. They had dredged there and at Cape Vera, had had beautiful weather to begin with, and had lived well on sea-birds and eggs. Then they had gone up to Cardigan Strait, but there the ice had kept them imprisoned for ten whole days on a little island, which they found so enchanting, with all the wind and the rain, and with starvation in view, that they gave it the name of 'Djævelöen,' or 'Devil Island.'

From there, after a lively skirmish with the ice, they escaped unharmed to the open sea under North Kent, and then sailed southward to King Oscar Land. They had dredged as well as they

could, but the unfavourable condition of the ice had hindered them very much. On the west side of Hvalrosfjord they had been obliged to leave the boat, and had crossed the mountains to Indre Eide, but when they did not find the 'Fram' in its old place, they at once thought of the bay by the ruins, and had thus arrived at Ytre Eide about noon on August 4. They had hardly any food left, but happily found the cache almost at once. At first they could not see the vessel, as the rigging was against the land, and they themselves were almost invisible, being in the shadow of the high mountains at the point. They understood from the cache that we were expecting them at Ytre Eide, and they had therefore waited there. They had no anxiety on the score of food, but were more troubled about house-room. Even at this time of year it is cold at nights without a sleeping-bag, or extra clothing, and their clothes and the whole of their baggage they had been obliged to leave with the boat. There were stones in numbers scattered about on the point, so that they had plenty of building materials, and they therefore set to work at once to make caves, the largest to hold two men, the others for one. Sleeping in them was a cool pleasure, and every now and then they had to go out and walk about to warm themselves.

We made some chocolate, allowed them a dram and a pipe of tobacco, and before long their spirits were at their highest. Our supply of tobacco had diminished very much during these four years, but we could manage a pipe for the dredgers, for it was many a long day since they had had a smoke. It was not to be wondered at that they had not cared to smoke moss, for it is horrible stuff.

They brought us the most joyful news that, from the top of 'Hvalroskap' (Walrus Cape) they had seen beyond the edge of the ice in Jones Sound, and had found open water the whole way east of Björneborg. If only we could have an off-shore wind now, for three or four hours! It was all that was wanted to sweep away the ice, which lay pressed up to the coast, and was shutting us in.

Before we had finished our chocolate and tobacco, the ice had drifted so far out that we could row straight across to the 'Fram'. We went apace, for there were eight men in the boat, and by half-past four we were on board.

This time the north wind was in earnest ; later in the evening it began to blow hard, and the last remains of the ice hurried out through the fjord. The 'Fram' did not escape coming into collision with the floes ; the rock we were moored to began to move like an erratic block, and did not stop before it was in the clay under the mountain. At four on Monday morning I sent Baumann up the mountain-side to scan the ice. At six we lighted the fires, took the stern moorings aboard, and at eleven in the forenoon of August 6 steamed out through the fjord, going first to fetch the boat, a little west of Hvalroskap. We went only a cable's-length from shore, but the north-wester had brought us fog, and we saw nothing of the land. The boat was soon found and hoisted up, and we steamed east, first in close, afterwards in slacker ice. Every mile we worked our way east the ice became slacker and slacker ; and soon we were under full canvas, on our way, full-speed, homewards.

CHAPTER XXXVI.

HOMeward !

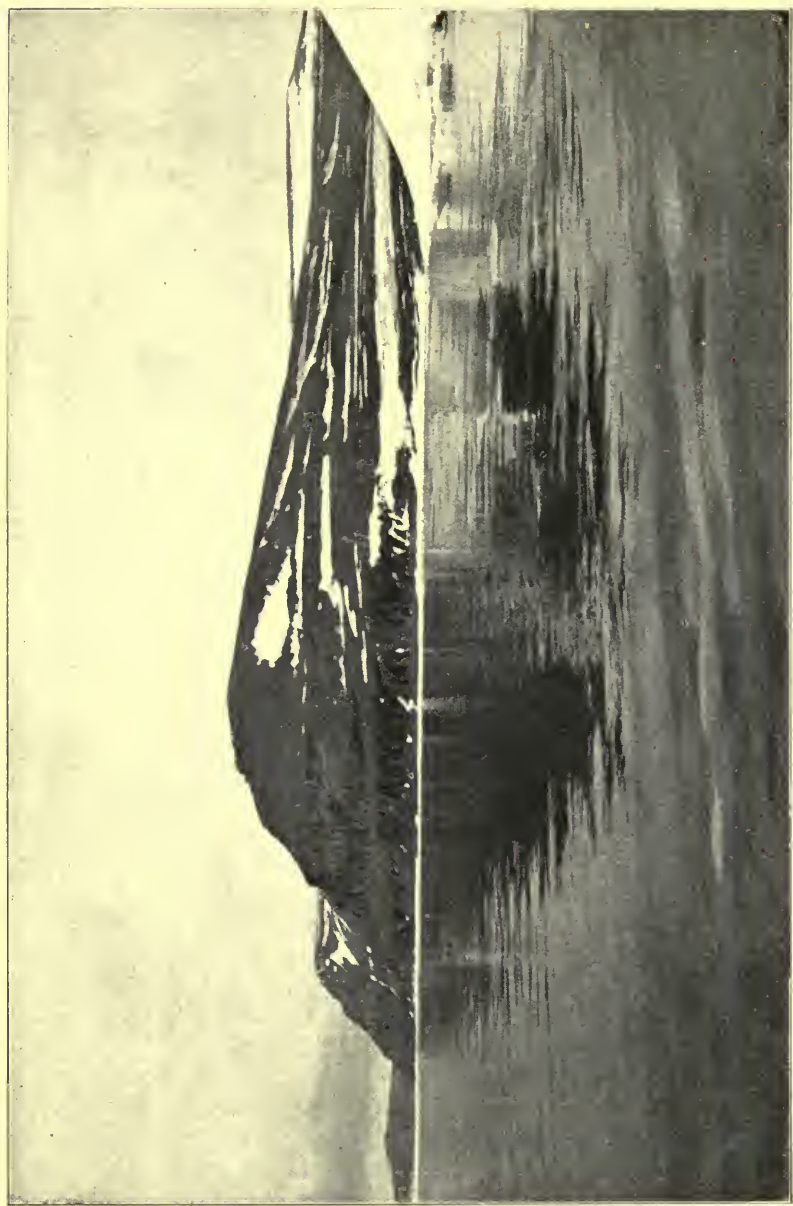
HOMeward ! What a strange ring in the simple word ! On our long and laborious sledge-journeys we had many a time used it when we thought of the 'Fram,' and a good home the 'Fram' had been these four years, warm and strong and well provided ; but that was in another way. Now the longing for home coursed through our blood, and all the yearning, which we had thrust aside during these long years, broke loose, rang in our ears, and made our hearts beat faster. Half forgotten memories and dawning hopes came back again. A sea of thoughts streamed in on us, and tied our tongues in the midst of the joy at going home. It was a moment full of promise when we knew that we were looking for the last time on these mountains and fjords, which for so long had been the object and the scene of our endeavour.

But the west wind cared little about all this. Probably it thought we were in no such great hurry after all, for in the evening it dropped altogether.

In the course of the night an east wind sprang up, and early in the morning, after we had passed the last ice-stream, we sailed close hauled. The wind increased, and soon the sea was so choppy that the 'Fram,' though she was fairly high in the water, again and again had the forecastle under. But then we were making up for lost time, with steam and sail.

That the 'Fram' is a roller cannot be denied ; but this time she outdid herself. It was as if she was revelling at being in her own element again, and meant to have a good bath after her long time of waiting.

On board things were in a critical condition, the tendencies



FROM THE EAST SIDE OF HELL GATE.

down grade, and prospects at a low ebb. Again this time the 'Fram' fellows sacrificed with ardour to the angry gods of the deep.

On the forenoon of the 7th, just as we had gone about, off North Devon, a squall fell on us, and, before we knew what had happened, the jib split; this ought to have been a strong sail, but it was certainly blowing very hard. As we were just outside Havnefjord during the afternoon, we resolved to go in there and wait till the wind dropped. We could then mend the jib, and fill the bunkers with coal; the latter we had not yet done, in order



A NIGHT SHOOTER IN THE SMALL HOURS OF THE MORNING.

that the ship might lie as evenly as possible as long as we were sailing in shoal water. Many a pale harassed face brightened when we again lay at anchor at our old place in there.

While the coaling was going on next day, Baumann sewed hard at the jib, and during the night the mate and I helped him, so that there was always somebody at work on it.

When the coaling was over later in the afternoon, I went ashore to see what our prospects were. I saw no ice in Jones Sound, but the wind was raging with unabated violence, and there was nothing for us to do out there. I went round by Braskerud's cross. An inquisitive bear had visited the spot, and pushed away

some of the stones, so that the cross had fallen a little to one side. I put it as straight as I could.

When we left Havnefjord, two years previously, we left the remains of some walruses behind us; they were lying there still, almost unaltered; some parts, which had always been under water, looked exactly the same as when we last saw them.

On Saturday, August 9, the wind went down somewhat. We began to take in water, and among other things, filled a number of barrels with water for the dogs. I had shot a hare when I was ashore, and I now sent Schei up to kill a few more, while Simmons went with him to collect some living plants. At two o'clock we heaved off, and when we went out into Jones Sound and headed for Cone Island it was cloudy and almost a dead calm. We made good speed, between five and six knots, and later in the evening got down to Lady Ann Strait, where a few scattered ice-streams were unable to stay our course. At four o'clock on Sunday morning we were abreast the southern point of Cobourg Island, and headed for the Devil's Thumb. At first we had fine weather, but afterwards a strong head wind sprang up, with heavy sea, and such thick fog that we could not see a ship's-length from us.

We saw no drift-ice whatever on Melville Bay, but passed a great number of icebergs, so that our voyage was by no means free from danger. More than once we almost thrust our noses into these unpleasant neighbours.

Sunday, August 10, was a beautiful day, with a fine breeze and calm sea; without sea-sickness and with good spirits. It was our first Sunday at sea for two years and we resolved to celebrate the occasion with a feast. Our tobacco by this time had nearly all ended in smoke, but with luck we should reach Godhavn in a few days' time. I had our remaining cigars counted, and found that there were twenty to each man. The mate tied them up in bundles, packed them in tinfoil, and put a bundle at each cover. I need hardly say they were received with enthusiasm.

On August 16 we saw land in the shape of the peninsula Svartenhuk peeping out of the fog. We now had clear weather for a couple of watches, but after that the fog came on again as

thick as a wall. To take observations was an impossibility, and one cannot trust to the compass in these regions; but once we had got hold of Disco Island we were able to anchor in Godhavn, on Sunday, August 17, at the same place as formerly.

As soon as we had dropped anchor the Superintendent, Herr Nielsen, came on board, accompanied by the pastor of Egedesminde, who was then at Godhavn on an official visit. We were all eagerness to get our home letters, needless to say, and it was therefore a most terrible disappointment when few of us received any. Schei, Nödtvedt, and Olsen were the only Norwegians who had any letters, and these were pretty well seasoned, for they were three years old. Simmons and Bay, on the other hand, had fresh news from home. It must not be thought that our friends and relations had forgotten us altogether; many letters had come for us too, but they had all been sent north to Upernivik, although Godhavn was the only place in Greenland where we now had anything to do, some coal still remaining to be taken on board there.

When the Superintendent left the ship he was saluted by the 'Fram's' canons, Peder and Hassel being second lieutenants. The salute was at once answered from the forts ashore. We were invited to dinner by the Superintendent, after which the pastor held a special service for us, and we ended up by visiting the Inspector of North Greenland, or rather his wife, as the Inspector himself was away on a journey.

They were exceedingly pleasant days that we spent up there among all these hospitable and helpful people. They did everything in their power to make our first meeting with civilization as agreeable as possible. We were frequent guests at the Superintendent's house, and he kindly procured us workmen to bring the coal on board, change the water in the boiler, and fill our freshwater tanks. He also let us have a man as watchman. The pastor took Bay, Simmons, and Schei on a shooting-expedition up the fjord. They were away a day and a night, and were loud in their praises of their host's hospitality.

On the 19th we had a dinner on board for the Inspector's wife, the Superintendent, and the pastor. We decorated our old vessel as well and as festively as we could, but too much must not be

expected of people who have been living for four years north of good manners.

We then prepared for our departure, added many good things to our stores, in the shape of salt meat, pork, coffee, and last, but not least, the indispensable tobacco; and besides these, had a good supply of fresh bread baked for us.

But we also took with us a sad memory of this place. We were obliged to part with a number of the faithful four-footed companions of our sledge-journeys. Some of them we gave away, mostly to the Superintendent and the pastor, but the older ones, as we did not care to give them into strange hands, were taken ashore and shot. The animals were as fat as they could be, and there was eager competition among the Eskimo to become possessors of the remains. They skinned them and feasted on the bodies.

As Baumann had succeeded in getting some sufficiently fine weather to take observations for time, we were now quite ready. On August 21, therefore, we said farewell to our friends, and, under salutes from both the forts, answered by the 'Fram's' two canons, bore out from Godhavn during the afternoon.

The sea was calm, the breeze a gentle one from the east-south-east, and we made a comparatively quick voyage across Disco Bay; but later in the night a fog came on, and southward along the coast of Greenland we had dirty weather, contrary winds nearly the whole time, and, as a rule, a gale and high sea. We tacked almost all the way, and it was only occasionally that we had a fair wind for a time. Nor had we any too much coal. When tacking against a head wind, therefore, we did not use more than 90 to 100 revolutions, although the engines could do about 150; when we steamed ahead, or about ahead, we used probably 120 to 130 revolutions.

During our stay in Godhavn Peder had pierced his knee with a marlinespike, and was not fit for work; he was quite unable to go aloft and take in sails. Hassel had to act as steward, and Lindström became stoker. The consequence of this was that there was only one man who could go aloft and furl or unfurl the sails, and this was the officer of the watch himself—Raanes and Baumann

respectively. This was a most unfortunate state of affairs, and might be positively fatal to us.

On Sunday, August 24, we lay south-westward with a slack breeze, and at noon discovered a sailing-ship to leeward. We saw at once that it was a ship belonging to the Royal Greenland Trade, and I decided to speak her and ask if they could let us have a couple of men. At two o'clock the 'Fram's' head was accordingly put round, and we approached the vessel, which proved to be the barque 'Ceres.' At half-past four we spoke her, but were answered 'No!' We turned at once, and stood westward.

However, we had not been sailing more than half an hour before we saw that the vessel had braced aback and was signalling us. We turned again, and bore down on her. When we were close under her lee the captain called out that he could let us have one man. We accepted the offer with joy, put out a boat, and rowed aboard. The 'Ceres' had not recognized us at first, but we were now received with all the greater friendliness.

An hour later we saw another sailing vessel. This proved to be the brig 'Tjalfe,' also belonging to the Royal Greenland Trade. From her we also got a man. We were destined to want them both more than we had any idea of at the time.

During the night it blew up from the south, and we had more dirty weather.

Neither the Danish captains nor we could discover any ice down at Cape Farewell, nor could either of them remember the water ever having been so warm before. We observed a temperature of 52° to 54° Fahr. (11° to 12° Cent.).

At midday, August 31, our latitude was 57° 46.5' N., and our longitude 47° 47' west of Greenwich. About half-past three Olsen came up from the engine-room and told me that the crowns had been burned down. As soon as the accident had been discovered the fires had been raked out, and the safety valve opened. Both the crowns were a good deal knocked about; one especially so. On closer inspection it proved that the accident had been caused by some grease, which had burned itself in. A couple of stays had sprung leaks. When they had been caulked and the boiler filled, we tried a cold water pressure of

120 lbs., and this answered well. At a pinch, therefore, there would be no risk in lighting the fires, and for a time steaming at a 70 to 80 lbs. pressure; at the same time we could use the engines as a compounding.

This was an exceedingly annoying affair for us, who were in such a hurry to get home; but, on the other hand, if we were to be disabled at all, it was a good thing that it had not happened until we were clear of the ice. The whole of the Atlantic now lay open and ice-free before us, and with the 'Fram's' good sails it would be easy enough for her to sail across it at a time of year when favourable winds could be counted on. A few days more or less would not make much difference in a voyage as long as ours had been; but to most of the members of the expedition it was a hard blow, and as directly after this misfortune we had several days of rough weather and contrary wind, the spirits of some of them sank into their shoes.

Things were not much better when, after the bad weather, we were becalmed for a couple of days. But after that our tribulations were at an end; we had a fair wind, and made good way east. On September 16 we lighted the fires in order to be able to use the engines in case we should again be becalmed when under land; but on the afternoon of September 17 we passed Fair Isle with a northerly breeze and seven knots' speed, and only used the engines to pump free. From thence we shaped the course for Utsire, the nearest point on the coast of Norway, and on the afternoon of the 18th were off the light there; but as we could not get a pilot that evening and we did not care to go in to Stavanger at night without one, we lay to for the night.

On September 19, at eight in the morning, we got a pilot and headed for Stavanger, with a fresh northerly breeze and the engines at work. The pilot, when he came aboard, did not know us, but as soon as he found out who we were, shouted the news to his companion in the pilot-boat.

If it is possible for a person to be questioned to death it must be the first man to board a ship after a voyage like ours. There was no end to all the things we wanted to know. Had the water been just under the deck we could not have pumped more



A NOSEGAY FROM GODHAVN.

assiduously than we pumped the unfortunate man who took us in to Stavanger.

We had spent a great part of the last few days writing telegrams, but they were never finished, for the nearer we approached home the more telegrams we remembered which ought to be sent. I numbered them and put them in order, so that they should be ready for sending off, and they amounted to a bundle of imposing size. At the outer part of Boknfjord we were welcomed by the



BAUMANN WITH THE SEXTANT.

first boats from Stavanger, the pilot at Utsire having telephoned that the 'Fram' had passed that place at eight o'clock, and had taken a pilot for Stavanger. The farther we went the more ships and boats we met, packed full of gaily dressed people. We, too, had put on our best, had washed and scrubbed ourselves to good purpose, and fancied ourselves very smart, but we soon saw that our best efforts were lost by the side of these more brilliant habiliments.

At the entrance to Stavanger harbour the town authorities

boarded us, with the exception of the much-respected mayor, who preferred remaining in his boat to venturing up our breakneck ladder. The quay and its surroundings were crowded with people shouting and waving a welcome to us.

Such a day as this makes one's heart warm. It is indeed so overwhelming that words can hardly be found to express what one feels, but it burns itself into one's bosom and warms one through many years.

Before the 'Fram' had anchored I was put ashore in the harbour-master's boat, with my wholesale stock of telegrams, which were destined, first, for those nearest to us, and then for various newspapers. It was as much as I could do to make my way through the crowd of people on the quay, and up to the telegraph-office. While I was standing there explaining to the manager that I did not know whether I had money enough to pay for them all, but that I would soon get some more, I heard a voice behind me, saying, 'If you are short of money I can lend you some,' and turning round found myself face to face with an old friend. We walked together to a hotel close by, and set to work to read and answer telegrams. Isachsen soon came to my aid, and we three kept at it till far into the night, and the next day began again. Among other telegrams was one from Admiral Sparre, offering us the flagship 'Heimdal' to tow us round to Christiania. We accepted the offer with thanks, and the 'Heimdal' arrived, commanded by my comrade of the first 'Fram' expedition, Captain Scott-Hansen. The different members of the expedition received telegrams telling them that all was well in their respective homes. From my wife I had, in addition, the good news that she was leaving Christiania that evening to meet me at Stavanger.

Had we been able to accept all the kind invitations that streamed in from the towns along the coast we should have been long in reaching Christiania. It was late in the year; our four years in the ice had left us out of training for such festivities, and we all longed to see our dear ones at home. We therefore had to refuse most of the invitations. After an unusually enjoyable and successful entertainment, given by the town of Stavanger, we left that hospitable place on the night of September 22. The chief of

the 'Heimdal' had offered any of the members of the expedition who might wish it quarters on his ship. There is not very much accommodation on the 'Fram,' and as we had added to the crew in Stavanger, there was now still less room. We therefore arranged that all the sea-folk should remain on board the 'Fram,' and the others, among them my wife and myself, move to the 'Heimdal.'

Off Obrestad light, on Jæderen, the wind was dead against us, and we had to turn back and go in to Risviken, where we were weatherbound for a couple of days. But by that time wind and weather had finished their agitation, and left anything more in that way to be done by ourselves and our countrymen in the affecting moments of reunion.

On Friday, September 26, we put in to Christiansand, where we were given a dinner and ball, and on the Saturday evening Colin Archer was fetched on board from Larvik. On Sunday morning we anchored at Langgrunden, off Horten, for an hour or two, and waited for some friends and acquaintances. Later on the Norwegian Government came on board the 'Heimdal;' farther in we went on to another man-of-war, and from that to the ice-breaker 'Isbjörn,' belonging to the Municipality of Christiania, on which we were received by the municipal authorities.

We had been met by quite a fleet of steamers and sailing-boats as far out as Horten, and the 'Fram's' triumphal procession from Stavanger to Christiania ended on a beautiful autumn Sunday which recalled to us the days, four years since, when we had gone the other way. What a difference between then and now! Yet how near each other these days appeared to us! It was as if the frost and ice of the polar night melted away before all this warmth of heart which flowed to greet us in the welcome of our countrymen; as if the remembrance of the four long years, with all their toil, was buried under the sweet-smelling flowers which were showered over us as we drove through the streets of Christiania; as if all the waving flags could waft away the furrows the winter had brought us.

So the 'Fram's' Second Polar Expedition was at an end.

An approximate area of one hundred thousand square miles

had been explored, and, in the name of the Norwegian King, taken possession of. If the members of the expedition have been able to do *anything*, this is owing in the first instance to the sacrifices of generous Norwegians: that we have not done *more* is, at any rate, not owing to want of will.

My warmest thanks are due to my owners, Consul Axel Heiberg and Messrs. Amund and Ellef Ringnes, who by their generosity sent out the Expedition. I thank them for the confidence which they showed in us all.

My thanks to the Norwegian Government, which lent us the 'Fram,' and the Norwegian Storthing, which repaired and altered the vessel.

My hearty thanks to my comrades for their geniality and good fellowship, for their great interest and their faithful work during the long years we lived together.

And again my thanks to all those who in different ways have supported us from the time the scheme began to take shape, until we again set foot on Norwegian soil.

OTTO SVERDRUP.

SUMMARY OF EXPENSES INCURRED BY THE OWNERS OF THE EXPEDITION.

	£	s.	d.
Provisions	2611	0	0
Insurance of the ship	125	0	0
„ „ ship's company	344	10	0
Wages	4722	10	0
Sundry expenses	1055	10	0
Instruments, 'ski,' sledges, equipment	2778	0	0
Repair of the 'Fram'	377	10	0
Total	£12,014	0	0

SCIENTIFIC APPENDICES.

I.

PRELIMINARY ACCOUNT OF THE GEOLOGICAL INVESTIGATIONS MADE DURING THE SECOND NORWEGIAN POLAR EXPEDITION IN THE 'FRAM.'

By P. SCHEL.

OUR knowledge of the geology of the North-American Archipelago is derived from occasional observations made during expeditions with some especial object, most of these observations being from the Franklin Search Expeditions.

Limited as were thus the opportunities for research, matters were still worse when it became a question of transporting the material collected. In more than one place are still lying whole collections got together by interested and energetic discoverers, who in the end were obliged to abandon them because it was impossible to transport them on their already heavily-loaded sledges, manned often by crews devastated by sickness; and they were thus able to convey with them only what could be carried in the pocket (M'Clintock, Aldrich).

On the material which was, nevertheless, brought back on many occasions, and was identified by Salter, Haughton, Heer, Ethridge, and many others, is based what knowledge we have of the geology of these tracts.

On a map compiled by Dawson* are marked, Archæan, Cambrian, Silurian, Devonian, Upper and Lower Carboniferous formations, Jurassic, and Tertiary. It is these formations that were likewise observed in the tracts explored by the 'Fram' Expedition.

From the Silurian in the Hayes Sound tracts Cambrian deposits have been separated, while those identified as Cambrian by Dawson are possibly of considerably younger age. In the Silurian of the vicinity

* 'Geological and Natural History Survey of Canada, 1886.'

NOTE.—Discrepancies between the chief sketch and the special sketch in the geological map arise from the fact that the former is a preliminary drawing done while on board, whereas the special sketch has since been worked out with the help of all the later observations, and is thus the more correct of the two.

of Jones Sound several deposits can be determined, although Devonian is there the prevailing formation. On account of the proximity to it of our winter quarters, it was possible to examine this area during the summer months, and consequently acquire comparatively better collections.

At a greater distance from winter quarters, namely Store Björnekap, was a rich Carboniferous limestone, from which Captain Sverdrup and I succeeded in bringing back a fair quantity of material on our return from a long sledge-expedition.

The other and more northerly points in Heureka Sound, the rocks or formations of which are indicated in the following sketch, I visited only while on spring sledging-expeditions. The observations were cursory, and made in haste, and the material brought back was exceedingly incomplete. The most important among this are specimens of the eruptive rocks frequently to be met with in these tracts, as well as some fragments which point to the existence hereabouts of Carboniferous, Alpine, Trias, and Tertiary. The most important collection of this latter formation was, however, brought back by Herr Simmons and Captain Isachsen, who visited Baumann Fjord in the spring of 1902 for the express purpose of collecting fossils. It was here that Captain Baumann observed coal the previous year, bringing back with him a few fragments of silicified wood and lignite.

ARCHÆAN ROCKS

occur on the south and east coasts of Ellesmere Land, from Havnefjord in Jones Sound to the inner part of Hayes Sound, and also on the east side of the inmost part of Bay Fjord. In every place where examination was possible they consisted of—sometimes peculiar—granite and gneiss-granite.

Crystalline schists are not found in the tracts adjacent to Hayes Sound or on the coast in the vicinity of Jones Sound, nor do they occur in Foulke Fjord on the Greenland side of Smith Sound.

CAMBRIAN, SILURIAN, AND DEVONIAN.

At Cape Camperdown, on Bache Peninsula, is found granite overlain by an arcose-like, partly conglomerate sandstone, in flat strata, the dip being north-north-west. Its thickness here probably does not exceed 500 feet, though the contour swells to considerably greater magnitude by reason of intrusions of Diabase occasioning an additional thickness of perhaps 300 feet. At its upper part this sandstone merges gradually, by interstratification, into a series of grey, sandy, and marl-

like schists and limestone conglomerates. From a few inches up to a couple of yards in thickness these conglomerates and schists, continuously interstratified, build up a series 600 to 900 feet in thickness, interrupted by two compact beds of yellowish-grey dolomitic limestone, about 150 feet in thickness. These are again overlain by a series similar to the underlying one, excepting that here the limestone conglomerates exceed the schists.

In a detached block, in all probability originating from one of the two 150-foot beds, were traces of fossils, of which only one, *Leptoplastus* sp., can be identified. In another detached block whose mother rock is not known was found *Anomocare* sp. It may be said with certainty after the finding of these fossils that this series contains deposits of the Cambrian age.

The second series of conglomerates is overlain by a light greyish-white limestone in a bed some 300 feet in thickness observed in the midst of the section of Cape Victoria Head. Indistinct *Orthoceras*, *Lichas*, and *Symphysurus* assign this limestone to the Lower Silurian period.

Above the *Orthoceras*-bearing, light-coloured limestone bed are some less extensive strata of alternating limestone and quartz-sandstone, and finally a 100-foot bed of close brown limestone, of which certain layers are fossiliferous, and gave an *Asaphus*, traces of other Trilobites and some Gasteropods.*

Following the direction of the dip to the north side of Princess Marie Bay we find it again, though seemingly somewhat abrupt, in the limestone beds of Norman Lockyer Island. A fauna with *Haly-sites* sp., *Zaphrentis* sp., *Orthisina* sp., *Rhynchonella* sp., *Leperditia* sp., *Illenus* sp., etc., assigns this limestone to Lower Silurian. It is again found with its fauna at the base of Cape Harrison, in this case with a thick superincumbent bed of marly sandstone, quartz-sandstone, and finally, extensive limestone conglomerate. This also occurs near the shore in Cape Prescott, indicating by its presence in the strike of the limestone of Norman Lockyer Island the disturbance undergone by these tracts.

The line along which this disturbance took place is refound on the west side of Franklin Pierce Bay, where the beds of limestone conglomerate dipping from the heights of Cape Harrison are cut off in the strike by a limestone, dark grey in colour and broken into a breccia.

Answering to this series, which chiefly consists of coast formations,

* For the determination of animal fossils mentioned here and later I am indebted to Dr. I. Kjær, who has been good enough to make a provisional examination of the material.

there are at Havnefjord, in Jones Sound, above some thin layers of quartz-sandstone which entirely cover the gneiss-granite there, a series of limestone conglomerates with marly schists and pure limestones of a thickness of 1200 to 1500 feet. These are again overlain by a series of beds at least 2000 feet thick, of hard, impure limestones, brown or yellowish-grey in colour, and often remarkably heavy.

At South Cape, which is entirely composed of this brown limestone, are found in the lower parts *Maclurea* sp. and *Halysites* sp., referable to Middle Silurian, while west of it, at Björneborg, the upper parts of the series contain badly preserved remains of *Orthocerata*, Corals, and *Pentamerus* cfr. *tenuistriatus*. Hereafter the upper part of the limestone seems to be equivalent to the older Upper Silurian (Land-övery). This brown limestone occurs from South Cape westward to Kobbeguten in Hell Gate, and is broken at Lille Sandör, tectonic disturbance bringing up the underlying conglomerate series and even the Archæan.

In Gaasefjord good sections are easily accessible on both sides of the fjord.

On the south side of Rendalen appears the brown limestone of the capes, Series A, with a flat dip to the north-north-west; but on the north side of the valley is a division of dark schist, Series B, lying conformably above the beds of brown limestone. Associated with these schists, particularly in their lower and upper parts, are numerous layers of pure dark limestone, frequently fossiliferous. In Rendalen and in Kobbeguten, where this same division also appears, a quantity of material was collected, of which fifteen species are provisionally determined, among them being *Favosites* sp., *Strophomena* cfr. *euglypha*, *Meristella* sp. in numbers, *Rhynchonella* cfr. *borealis*, *Pentamerus* cfr. *galeatus*, *Spirifer* cfr. *elevatus*. The period of this division in Series B is Wenlock.

The upper part of Series B appears, among other places, at the headland north of Tunneldalen, in Hvalrosfjord. Above a black shale containing *Monograptus* sp. and *Leperditia* cfr. *phaseolus* is a bed of fragmentary limestone with *Favosites*, *Strophomena* cfr. *pecten*, *Atrypa reticularis*, *Pterinea* cfr. *Sowerbyi*. From a locality in Gaasefjord, on the same horizon, were taken *Favosites* cfr. *Hisingeri*, *Favosites Gotlandicus*, *Thecia Swinderenana*, *Spirifer elevatus*, *Spirifer* cfr. *crispus*, *Strophomena corrugatella* Dav., *Pterinea* sp. According to these, the period of this upper part of Series B should be Ludlow. The thickness of the series is about 1000 feet.

In Hell Gate, as well as in Gaasefjord and Hvalrosfjord, these strata are overlain by Series C; in its lower parts consisting of interstratified

light and dark marl schists, which are sometimes sandy, while in its upper part appear pure quartz-sandstone beds and argillaceous sandstone. The collective thickness of these strata is about 1000 feet in Gaasefjord, while in Hell Gate it is possibly somewhat greater. No fossils were found in this series.

At the base of the high cliffs at Indre Eide and Borgen appears Series C. In both of these places it is overlain by a dark limestone and black shale, partially fossiliferous. This dark limestone and shale are the lowest layers in a series of strata at least 1500 feet in thickness, Series D, which appears in the profiles on both sides of Gaasefjord, from Borgen to the foot of Vargtoppen (Wolf Top), and from Indre Eide to Skrabdalen.

In Series D *a* occurs *Atrypa reticularis* in great quantities, but little else. On the other hand, there are preliminarily determined in D *b* about fifty-five species, of which may be mentioned: *Favosites* sp. div., *Columnaria* sp., *Cyathophyllum* sp. cfr. *hexagonum*, *Receptaculites* sp., *Fenestella* sp., *Homalonotus* sp., *Burmeisteria* sp., *Dechenella* sp., *Prætus* sp., *Bronteus* sp., *Orthis striatula*, *Leptæna* sp., *Strophomena*, *Streptorhynchus*, *Atrypa reticularis, aspera*; *Rhynchonella (Pugnax)* cfr. *reniformis*, *pugnus*, *Productus* cfr. *prælongus*, *Spirifer* of the *Verneulli*, *Murch.* type, a peculiar *Pentameride*, *Terebratula* cfr. *Dielasma*, *Pterinea* sp., *Modiolopsis* sp., *Lucina* sp. div., *Bellerophon* sp., *Platyceras* sp., *Orthoceras* sp., *Gomphoceras*, gigantic nautilus and ganoid scales.

The fauna in D *c* is merely a repetition, and, in the case of certain species, a further development of the forms found in D *b*. It will thus be seen that there is a spring in regard to the fauna between the upper layers in Series B and the lower ones in Series D, which more particularly resemble Lower or Middle Devonian.* The concordantly embedded (?) Series C might therefore be thought to represent uppermost Silurian as well as lowest Devonian.

Divisions D *d* and D *f* are poor in fossils, and are partly shale divisions. In the impure limestone in D *g* occur again numerous fossils, among which are *Atrypa reticularis*, *Rhynchonella* cfr. *cuboides*, *Spirifer* cfr. *undifera*, *Productus* sp., *Terebratula* cfr. *Dielasma*, *Pterinea* sp., *Avicula* sp., *Modiolopsis* sp., *Pleurotomaria* sp., *Prætus* sp. Traces of placoderm fish are also met with. Above these strata are beds of purer limestone, D *h*, and above these again some less pure, D *i*. The uppermost strata of D *i* alternate with strata of light-grey quartz-sandstone, terminating with a clay-sandstone, which in places is richly fossiliferous, though the fossils are in a bad state of preservation.

* Indeed, since writing the above Mr. Ch. Schuchert, Natural History Museum, Washington, tells me in a letter that, judging from the above faunal list, he thinks they may be Middle Devonian, or even low Upper Devonian.

Among these are lamellibranchiata, *Dechenella* sp., remains of *Holoptychius*, etc.

This argillaceous sandstone is simultaneously the last link in Series D, and the first in Series E. This is a huge collection of quartz-sandstone strata building up the mountains on both sides of the inner part of Gaasefjord. The lowest part, which is 900 to 1200 feet in thickness, consists almost exclusively of quartz-sandstone. On the north side of Skrabdalen, in the sandstone profile, occur conglomerate strata, half an inch to an inch in thickness. In these were found considerable remains of *Cocosteus* sp., *Holoptychius* sp., and *Modiola angusta*. In the same strata with these were also seen indeterminable plant-fossils. Slightly higher up in the profile, however, in a black shale which occurred in two lentiform masses, eighteen inches and six feet in thickness, were found numerous plant-fossils.

Professor Nathorst, of Stockholm, who has kindly undertaken the examination of these, says that among others are *Archæopteris fissilis* Schmalh. and *Arch. archetypus* Schmalh., both characteristic of Upper Devonian. In examining the material collected, Professor Nathorst also found with the plant remains some remains of fishes.

CARBONIFEROUS.

Store Bjørnekap at its lowest part consists of beds of brownish-grey, hard, fossiliferous limestone; higher up of a white pure limestone, flinty limestone, and pure flint-strata, richly fossiliferous, among the fossils being *Lithostrotion* sp., *Fenestella* sp., *Streptorhynchus crenistria*, *Rhynchonella (Pugnax)* sp., *Spirifer* cfr. *ovalis*, *cuspidatus*, *mosquensis* (?), *Productus* cfr. *semireticulatus*, *costatus*, *punctatus*, *cora*, etc.

MESOZOIC FORMATIONS.

The coasts on both sides of Heureka Sound consist chiefly of quartz-sandstones with subordinate schists and limestones. Fossils are only found in a few specimens collected from in all five places. Thus from Ammonitberget on the northern point of Bjørnekaplandet was taken an ammonite and some lamellibranchs, among which perhaps is *Daonella Lommelli*. Likewise an ammonite and lamellibranchiata from the marly sandstone on Hatöen, in Bay Fjord, and from the black shale of Blaafjeld, *Daonella* sp.

TERTIARY.

In the depressions between the mountains of Mesozoic sandstones abutting on Heureka Sound, are in many places thick deposits of light

quartz-sand with embedded strata of lignite. The same is also the case in the lowlands east of Blaamanden and at the head of Stenkulfjord in Baumann Fjord. In addition to the lignite, masses of slaty clay were also found at the latter place, in which were well-preserved remains of *Sequoia Langsdorffii*, *Taxodium distichum* var. *miocenum*, and some others, well-known witnesses to a southern vegetation in these regions, in a geologically late period, *i.e.* the Miocene.

ERUPTIVE ROCKS.

In addition to the above-mentioned sedimentary deposits, eruptive rocks of different kinds are met with in various parts of Ellesmere and Heiberg Lands. Dykes of these, for instance, exist in the Archæan rocks in Havnefjord—in this case porphyry—and also in several localities in Henreka Sound, where they take the form of diabases and porphyry.

Of far greater importance are the volcanic rocks pressed in between the strata of sedimentary rock, and the superincumbent layers of out-flowed lava. Mention has already been made of how in the profile of Cape Camperdown, on Bache Peninsula, various strata-like masses of volcanic rock occur. The same are found in Foulke Fjord in great prevalence; and still further south, as, for instance, at Cape York, 'basalts' are known. It is a fact worth noticing that whereas the aggregate thickness of the intrusive rocks at Cape Camperdown amounts to about 3000 feet, the thickness at Fort Juliana, in Hayes Sound, is considerably less, while up Beitstadfjord and at the head of Flagler Fjord they are non-existent.

Again on Grinnell Land we find similar rocks—for example, at Hareleiren, Blaafjeld, etc.—in the form of thick intrusives. In this manner also they occur in Heiberg Land, among other places at Kvitberget and on Storöen, near the site of the depot. In all cases they partially consist of quartz-diabases, dark and rather heavy, often holocrystalline, sometimes with remains of a vitreous basis, or granofyric interstitial fillings.

The rocks of this type which occur in Grinnell Land are found in the shape of intrusives in Mesozoic schist, where a limestone—probably Triassic—is so altered by contact that the fossils in it are more or less indistinguishable. On the islands at Lands Løkk are similar masses, possibly intrusives. They are lighter in colour, and consist of greenish porphyritic rocks, with phenocrysts of felspar, olivin, angite, and a very close ground mass, resembling in its phenocrysts the lavas which appear somewhat more to the south, at Sorte Væg (Black Wall), in Heiberg

Land. Here, above flint strata which presumably bears Carboniferous fossils, is found strata of Labradorite porphyry, amygdaloid, melafyre-amygdaloid, and tuffs, which are probably Carboniferous, as they are covered by strata of flint resembling the underlying one. These latter lavatic rocks seem, therefore, to belong to an earlier eruptive period than, at any rate, some of the aforesaid intrusive masses.

It may be mentioned that the melafyres on the islands of the Lands Lokk archipelago are traversed by veins of diorite-porphyrific rock. Fragments of these rocks were brought back from Ringnes Land by Captain Isachsen.

On both sides of the southern outlet of Heureka Sound are thick intrusives, the median part of which is of quartz-bearing mica-diorite; the close-grained salbands being of ordinary diorite. This same rock appears at the base of Ammonitberget, near Björnekap, in this case in the shape of a thick dyke in the Triassic deposits.

No younger eruptives were observed either at Jones Sound, Vendomfjord, or Bay Fjord. Accounts of the expeditions of Nares and Greely, to the inner parts of Greely and Archer Fjords or on the north coast of Grinnell Land, make no mention of 'basalts.' The greater injections of eruptive masses seem pre-eminently confined to two lines—those of Smith Sound and Heureka Sound. That that of the latter is an old wound is proved by the flows of lava near Sorte Væg. In conclusion, it may be mentioned that all these eruptive rocks are pre-Miocene, dislocated when the Miocene deposits were formed.

SOME REMARKS ON THE STRUCTURAL AND OROGRAPHIC CONDITIONS.

Once covered by the deposits of the different formations in flat layers, the visible portion of the earth's crust has undergone here disturbances of radical nature. Side pressure has occasioned folds in the plane of stratification, and a system of fissures has again divided it into plateau-like areas. Of these, some have sunk and others risen in proportion to their surroundings, giving in some cases re-access to the sea; while others, as in Ellesmere, Heiberg, and Ringnes Lands, rise to considerable altitude.

Near the great Archæan plateau in Ellesmere Land proper, and more particularly in Vendomfjord and the inner part of Bay Fjord, the small areas have been violently dislocated. The movement, moreover, seems to have been concentrated in the immediate vicinity of Heureka Sound. The areas in both places are of comparatively small extent, and the disturbance is plainly visible to the eye, the dip of the strata being often 50° to 60°. Possibly connected with the Heureka Sound line, as being the place of greatest disturbance, is the circumstance, already pointed

ont, that intrusive masses are found in great quantities along this line.

It is round the great plane of Archaean rock that the aforesaid sinking took place, and the dip in Hayes Sound and the western part of Jones Sound is towards the north-north-west. About Björnekap and Heureka Sound, however, it is just as frequently towards the south-south-east, though without real folding. This does not occur until the northern side of Greely Fjord is reached.

Continuing westward along the coast of Grinnell Land, we see folds in the Triassic limestones, shales, and sandstones, the axis of the folds ranging north-east by south-west. The folding is nowhere pronounced, and disappears towards Lands Lokk. It does not seem to continue on to Heiberg Land, though, on the other hand, we know it to be found at Robeson Channel (see H. W. Feilden and De Ranee, 'Geology of the Coasts of the Arctic Lands,' etc., *Quarterly Journal of the Geological Society*, vol. xxxiv. p. 556, London, 1878).

Can it be the axes of the folds from the north side of Greely Fjord which appear at Black Cape, Cape Rawson, and Cape Cresswell? And could Feilden's *Cape Rawson beds*, within whose horizon probably Mesozoic* as well as Tertiary deposits (Cape Murchison) are known to occur, possibly be the Mesozoic shales and sandstones of Heureka Sound?

As will be seen from the foregoing, the series of Siluro-Devonian sedimentaries in south-western Ellesmere Land, as well as the Triassic deposits farther north, take part in the dislocations. Some of these, if several systems exist, are younger at any rate than the Triassic.

On the other hand, Mioocene sand and lignite occur east of Blaamanden in an isoclinal strike valley bounded by what are presumably Mesozoic sandstones lying in a horizontal position; and, similarly, wherever Tertiary deposits were observed, the stratification was undisturbed. It must, therefore, be permissible to suppose that the more conspicuous dislocations are post-Triassic, but pre-Mioocene.

In connection with this may also be mentioned the ubiquitous traces of a movement in the earth's crust, a 'rising of the land,' in a geologically late period. Ancient sea-margins in the form of terraces are a very common phenomenon. They are everywhere to be found in the tracts adjacent to Hayes Sound, and at Fort Juliana, to a height of 570 feet. The highest measured raised beach at Rutherfordlandet was 384 feet, and on Bedford Pim Island 344 feet.

At the head of Gaasefjord in Jones Sound the highest terrace measured 466 feet, and at a similar, perhaps somewhat greater elevation

* At Cape Baird and Autoinette Bay.

erratic blocks were observed in the pass between the head of Trolldfjord and Bay Fjord. Farther north also, that is to say, in Heureka Sound, terraces were observed, but no measurements were taken of them.

Another circumstance in connection herewith will be seen in the illustration facing page 28 (vol. i.), and in the illustrations on pages 105 and 175 (vol. i.), in the shape of a shore formation situated at an approximate height of 600 feet.

The Archæan plateau of Ellesmere and North Lincoln Lands, which once was covered by strata of younger formations, is, as it were, planed off to form a surface of the same level as the deeply sunken plateaus in the north and the west. It is an even highland, averaging 3000 feet in elevation, with short valleys leading from the precipitous outer margin up to the plateau, from which arise no isolated peaks of any considerably greater height.

The plateau of Archæan rocks is continued in the Cambrian, Silurian, and Devonian strata, towards the western part of Jones Sound, where, sloping gently towards the north-north-west, it sinks partly under the sea in Norskebugten and partly is replaced by their dislocated equivalents and younger deposits in Fuglefjord and Eidsfjord. Towards the north, Cambro-Silurian strata continue the surface of the plateau of Bache Peninsula and the land near Flagler Fjord.

In the vicinity of Heureka Sound, which is the place of greatest dislocation, the narrowness of the plateaus and the abruptness of the dip have contributed to a greater breaking up of the surface. Intersecting strike valleys and numerous cross valleys separate and cut up the areas, the highest edges of which were easily elaborated into crests and peaks. Seen from certain points, the landscape here presents the rich elaboration of Alpine forms, though in other directions retaining the character of the tableland which it really is.

West of Heureka Sound, on the south-west and north sides of Heiberg Land, as well as north-west of the area where the folds occur in Grinnell Land, is again the same plateau surface as in Ellesmere Land.

THE GLACIATION OF ELLESMERE AND HEIBERG LANDS.

Although glaciers in different parts have been observed over nearly the whole of Ellesmere Land, and although the greater part of the country is covered with ice and snow, no 'inland ice' proper can be said to exist there.

The glacial covering is nowhere of sufficient thickness to hide the configuration of the land under what would be the shield of an 'inland ice,' and it consequently falls into sub-divisions restricted by the topographical conditions of the country. North Lincoln consists of a fairly

level plateau of Archæan formation, sustaining a field of glaciation which is the largest in these regions, and which, at the same time, most resembles an 'inland ice.' Its outrunners, as a rule, reach the sea in the shape of productive glaciers. Their dimensions are too small, however, for them to be called ice-streams, and to as great a distance inland as it is possible to see from the sea, isolated tops and depressions between the mountains break the surface of the ice. Near Smith Island, in Jones Sound, and at Cadogan and Baird Inlets, towards the north, this becomes more and more the case, and independent fields of glaciation take the place of what was still, notwithstanding the breaks, a more or less continuous ice-mantle.

In the vicinity of Hayes Sound the Leffert and Alexandra glaciers and the Hayes Sound glaciers are the largest of these fields of glaciation which uniformly fill all depressions in the land, and to the east at any rate shoot out their main arms seawards. Towards the west, on the other hand, they terminate in valley glaciers and plateau fronts, while the Hayes Sound glaciers clothe the heights south of the Flagler Fjord-Bay Fjord pass with an ice-cap which descends to the valley in one place only, barring it from side to side and damming up a lake. North of the pass is another ice-mantle, from which a few arms reach the sea, in Princess Marie Bay and Cañonfjord.

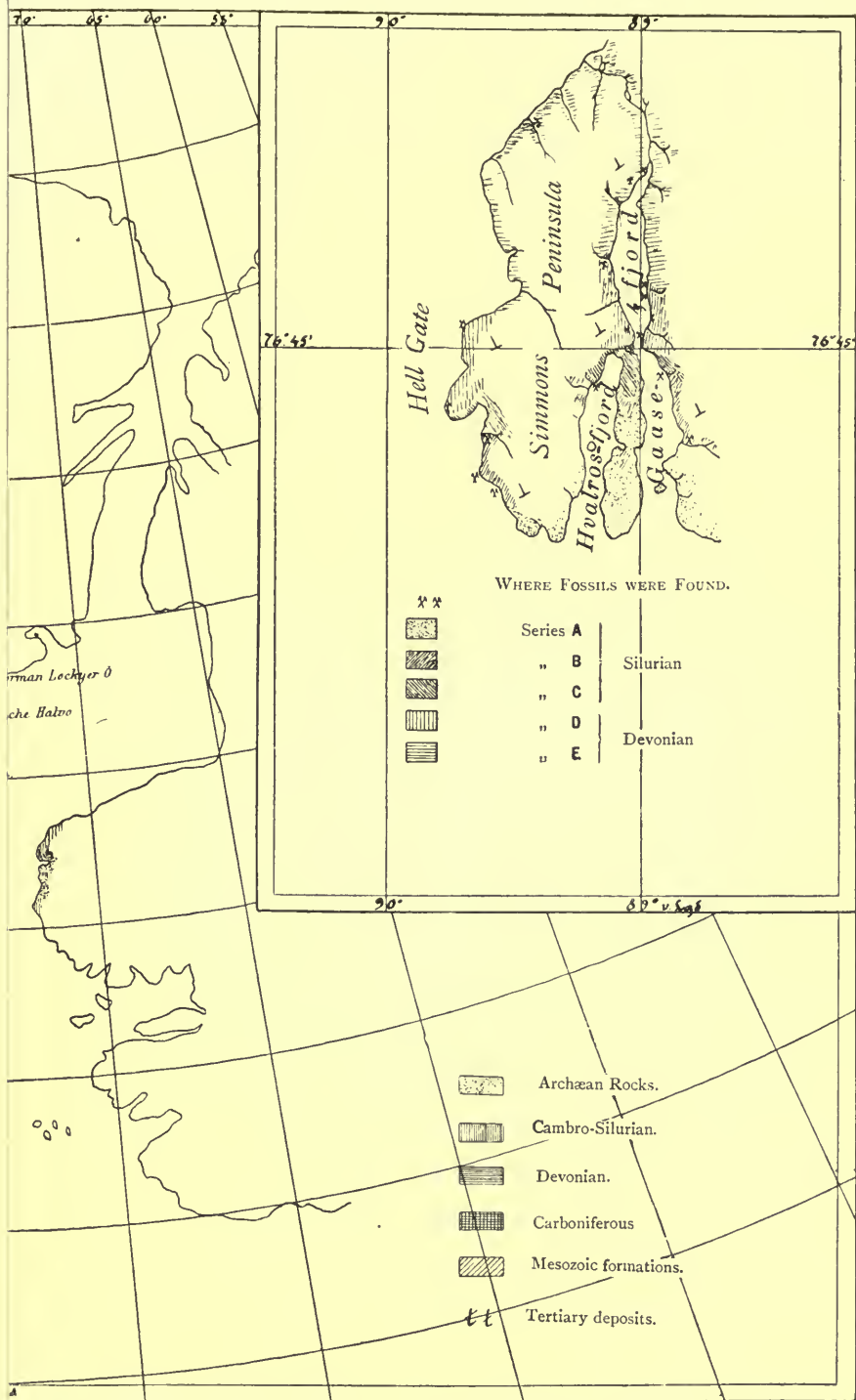
Following the south coast of Ellesmere Land westward from Cone Island, where extensive glaciation still approaches the coast in the shape of a large productive glacier, the ice-mantle will be seen to recede from the outer coast, and from here onwards a few arms only reach the sea at the heads of the fjords, as, for instance, in Sydkapfjord and Baadsfjord. As a rule, they are not met with until the valley has been ascended for some little distance, as in Framsfjord, Grisevfjord (Pig Fjord), and Havnefjord. In the western part of Jones Sound the glaciation on the outer coast is confined to local glaciers of the snow-drift type, which I have already described, while the plateaus between the fjords and the deeper valleys are covered by thin ice-mantles and stationary snow-fields, which are unable even to feed the valley glaciers. West of a line from the head of Bøffelfjord (Buffalo Fjord), past the head of Stenkulfjord, east of Vendomfjord, and up to the outrunner from the Flagler Fjord-Bay Fjord pass, all the lower land is free of snow in the summer months, some few snowdrift-glaciers only, at Hell Gate, being exceptions to this rule.

Although the actual glacial covering disappears on the west coast of Ellesmere Land, a covering of the kind is again to be found on Heiberg Land, in the tracts adjacent to Gletcherfjord, Ulvefjord, and Skaarefjord. Like everything to do with a glacial covering, this is primarily caused by climatologic conditions in conjunction with the configuration

of the land: the deeply sunk depressions between lofty mountains forming sheltered gathering-grounds for the snowfall occasioned by the milder southerly winds, and for the drifting snow brought by the northern blast. The latter plays a great part here; for this wind it is which distributes the snow according to the shelter afforded it, not only on a small scale, but also on a large one.

In connection with these few words on the present glacial covering of Ellesmere and Heiberg Lands, it may be mentioned that the position of the marine-terraces with regard to now existing glaciers indicates very conspicuously that the glaciation during the last (in case there have been several) great submersion of the land—the highest sea-margin in the inner part of Hayes Sound is some 600 feet—was not in any case of greater intensity than it is now, and that it has never since that period exceeded its present intensity.

The gneiss-granite surface at about the same height above sea-level as the highest terrace, in immediate proximity to the present glaciation and unaffected by disintegration, shows no *roches moutonnées*, striae, or groovings. Furthermore, no drift materials which might reasonably be supposed to originate from the activity of glaciers can be shown at any part of the now unglaciated land.



II.

SUMMARY OF THE BOTANICAL WORK OF THE EXPEDITION, AND ITS RESULTS.*

By HERMAN G. SIMMONS.

CAPTAIN SVERDRUP having asked me to write a short account of the botanical results of the expedition, I have compiled the following, which is in the main a *résumé* of an account already published in English in *Nyt Magazin for Naturvidenskaberne*.

With the exception of some plankton-fishing on the voyage up to Greenland, the botanical work began with some excursions ashore in the Danish colonies. It is hardly necessary to point out, however, that no 'find² of great interest was likely to be made in a visit of a few days' or hours' duration, these tracts having been far too thoroughly worked over to give any result worth mentioning in so short a time.

Before arriving at our real field of labour, that is to say, Ellesmere Land, we visited, on August 16, 1898, Foulke Fjord, in North-west Greenland ($78^{\circ} 18' N.$), and another short visit was made there the following year at about the same time. This tract had already been visited by Kane's, Hayes's, Hall's, and Nares's expeditions, and in particular, the botanist of the latter expedition, Hart, brought back with him a tolerably large botanical collection. Besides finding at least thirty-five of the forty-four phanerogams which make up Hart's list, and possibly also a few more, which, however, in such a case, I classify differently, I am able to augment the list of the Foulke Fjord higher plants with thirty-three species, among which the following are new for the whole of North-west Greenland: *Arabis Hookeri*, *Eutrema Edwardsii*, *Ranunculus affinis*, *Carex glareosa*, *C. incurva*, *Woodsia glabella*, *Equisetum arvense*, and probably a few more which I have not had an opportunity of examining since my return. About seventy species should thus be known from Foulke Fjord, a number which not inconsiderably exceeds the previous tale from any part of North-west Greenland; and I have no doubt that, had I had a little more time at my disposal, and been

* From the Swedish.

able to visit the head of the fjord and the country north of it, I should have been able still further to increase this list.

It is possible that the two large southern fjords—Inglefield Gulf and Wolstenholme Sound—sustain an equally or even more prolific plant-life, although this does not transpire from the meagre literature we have on the subject. Certain it is, however, that the luxuriance of the Foulke Fjord vegetation far exceeds that of any other place I have seen north of Danish Greenland. In no other part was the country so extensively green; or in other words, vegetation, and not rock, determined for large areas the tint of the landscape.

In great measure this luxuriant vegetation was brought about by the manure provided by the millions of little auks which breed here. This was particularly the case on the slopes near Etah, where *Alopecurus alpinus* reached a height of a foot and a half, and many other species here were larger and more vigorous than elsewhere in these northern tracts, a circumstance which could hardly have been the case but for this fertilization. A vigorous vegetation also clothed the vicinity of the old Eskimo settlement, Etah, and I found there species which I saw nowhere else. Among these may be named *Erigeron compositus*, *Hesperis Pallasii* (also found in a few places in Ellesmere Land), *Arabis Hookeri*, *Wahlbergella triflora*. The mass of the vegetation here, however, consisted of *Alopecurus alpinus*, *Poa flexuosa*, *Glyceria* sp., and other grasses, also *Taraxacum* sp., *Papaver radiculatum*, *Cerastium alpinum*, *Draba hirta*, *Saxifraga cernua*, etc. The slopes above Etah were less luxuriant, although they were covered with a close carpet of grass, mingled with which were, among others, *Arnica alpina*, *Ranunculus affinis*, *Dryas integrifolia*, partly in forms which may perhaps have caused the statement that *D. octopetala* grows here, *Potentilla emarginata*, *Polygonum viviparum*, *Oxyria digyna*, *Salix arctica*. The mosses play a greater part in this vegetation than the aforesaid one. Farther out on Reindeer Point the vegetation was more meagre, and the bare rock visible in large patches. In certain parts of the slopes predominated the small shrubs *Myrtillus uliginosa*, *Cassiope tetragona*, *Empetrum nigrum*, which, however, did not rise to any height above the ground.

From the middle of August, 1898, to the beginning of the same month, 1902, my chief field of work was Ellesmere Land. The first visit, on August 7, was not, however, to the mainland, but to Bedford Pim Island, in the vicinity of Greely's last winter station, Camp Clay, of sad renown. On account of its immediate proximity to Kane Basin, the plants on Pim Island were few in species, and, as a rule, stunted in growth. My impression of the vegetation of Ellesmere Land was improved

by two subsequent excursions, one to the south side of our first winter harbour, which was soon afterwards visited for the first time, and in particular one to Cape Rutherford, where we landed on August 21. Here the vegetation was close and luxuriant over considerable parts of the plateau which constitutes the interior of the peninsula. Particularly noticeable was *Papaver radiculatum*, which, notwithstanding the lateness of the season, was still in full bloom. Other flowers were also in bloom, probably because the snow had lain long, and they had been late in regaining their functional activity. On the slope leading down to Rutherfordidet, on the other hand, where, on account of its favourable aspect, 'spring' was considerably earlier than on the plateau, nearly all the flowers, with the exception of *Saxifraga tricuspidata*, were over. I saw, among others, *Myrtillus uliginosa* and *Cassiope tetragona* as well-grown as in Foulke Fjord.

A few days later there was a fall of snow, and no more excursions could be made that year. Occasional investigations could still, of course, be made now and again, but our winter harbour was not altogether suitably situated for winter observations. A series of temperature readings was made from February to June on thermometers placed under snow half a mètre and a mètre in thickness. The readings showed that apparently the covering of snow does not in the end retain warmth much above the mean temperature of the atmosphere, though of course the changes are fewer and slower. In the spring, and somewhat late in the summer, observations were made on the temperature in direct sunlight absorbed by thermometers with clear and with coloured bulbs.

On June 1, 1899, I went my first real botanical excursion for the year. The warm sunny weather of the last few days had melted most of the snow on the slopes on the north side of our harbour. Many plants had sprung into activity, and the young leaves and shoots of several species were visible. *Saxifraga oppositifolia*, ever the most forward, was here and there with partially or entirely open flowers. The first fortnight of June was spent on a sledge-journey to Hayes Sound, which was the only opportunity I had of examining the vegetation in the inner part of this large fjord. On this occasion were found a number of species which are not met with in the tracts out towards Kane Basin, to which, during the remaining time of our sojourn in these tracts, my researches were confined. The chief places examined later on in the summer were: the immediate neighbourhood of Frams Havn, where some prolific slopes on the north side added, in particular, a considerable contribution to the collections of phanerogams, Cape Rutherford and its vicinity, Bedford Pim Island, and Cocked Hat Island. Twice later I went as far in as Alexandra Fjord; the first time in the beginning of July, when Twin

Glacier Valley in that fjord, Lastræadalen, Eskimopolis, and the vicinity of Cape Viele at Buchanan Strait were visited. The second time was at the beginning of August, when I was chiefly occupied in making collections on Skrællingöen, in Alexandra Fjord. Both these trips gave very good results, though the time in both cases was shorter than I could have wished.

The above places near Buchanan Strait and Bedford Pim Island had once before been visited by a botanist—namely, the aforesaid Mr. Hart. He notes sixty-one vascular plants from there, a number which, however, must be somewhat reduced, partly because in his list of species found he includes forms that are now united with other species also in his list, and also because (partly through intermixture with plants collected in Greenland?) he includes species which, doubtless, do not appear here at all. From his list, therefore, must be excluded: *Papaver alpinum*, *Draba rupestris*, *Cerastium latifolium*, very likely also *Potentilla anserina*, *Pedicularis lapponica*, *P. flammea*, and *Carex rigida*. With these reductions there remain on his list only two species which I did not find again, namely, *Carex alpina* and *Poa alpina*. The additions to the higher flora in the vicinity of Hayes Sound, which I was able to make, are as follows: *Antennaria alpina*, *Campanula uniflora*, *Pyrola grandiflora*, *Arabis arenicola*, *Hesperis Pallasii*, *Cardamine bellidifolia*, *C. pratensis*, *Draba nivalis*, *D. fladnizensis*, *Potentilla pulchella*, *P. sp.*, *Saxifraga stellaris* var. *comosa*, *Ranunculus hyperboreus*, *R. pygmaeus*, *Stellaria humifusa*, *Sagina nivalis*, *Glyceria Vahlana*, *G. distans* (*vaginata*), *G. maritima* (*vilfoidea*), *Poa pratensis*, *P. abbreviata*, *Catabrosa algida*, *Colpodium latifolium*, *Aira flexuosa*, *Carex pulla*, *C. incurva*, *C. ursina*, *Luzula nivalis*, *Lastrea fragrans*.

The material collected, in most cases, is fairly abundant; many species were collected in many different places, and a number in the catalogue of the collection generally comprises several specimens. Of the cryptogams, on the whole, a large number of specimens were collected, and the total of numbers of mosses, for instance, is about five hundred. I cannot, however, at the present standpoint in the classification, give even an approximate figure for the number of species in the various cryptogamous groups.

After our second visit to Foulke Fjord we set out for Jones Sound, where, on August 26, 1899, we visited a fjord behind Cone and Smith Islands, on the south coast of Ellesmere Land, afterwards named Fram-fjord. We stayed there for two days, and as the flora was decidedly rich and the vegetation so vigorous that it reminded me of Foulke Fjord, this short stay gave a relatively good result. The two excursions which I made here brought in the following species, which are new to the Ellesmere Land flora: *Pedicularis lanata*, *Armeria*

sibirica, *Saxifraga Hirculus*, *Potentilla Vahlana*, *Eutrema Edwardsii*, *Braya purpurascens*, *Pleuropogon Sabinei*, *Trisetum subspicatum*, *Elyna spicata*. An *Aira* was also found, very unlike that of Frans Havn in its habitat, and as far as I could make out identical with *A. brevifolia* as described from Melville Island.

From Framfjord we went on to Havnefjord, where we found our second winter quarters. As, however, the country was covered with a fall of snow a few days after we came there, no work worth mentioning was done that autumn, nor had I any opportunity to dredge. The winter passed in a manner very similar to the previous one, and again only occasional observations could be made. In the spring were made some more observations with coloured thermometers, and also a number of observations of the degrees of warmth on the surface of the ground, among vegetation, etc., in sunny places. This winter was remarkable for very great changes of temperature, and at the beginning of May there was every indication that it would soon be summer. The ground in favourable places was bare, and *Salix arctica* began to show bursting buds. The weather then grew colder again, and it was not until June 6 that I saw *Saxifraga oppositifolia* in flower. On the 11th followed *Salix arctica*, and before the end of the month I had noted nineteen flowering species.

My excursions this summer were chiefly to various parts of Havnefjord, though I also went a couple of trips westward, one of which was as far as to the inner part of Muskufjord. As during these excursions I passed the limit of Archæan rocks, I had a good opportunity of observing how much richer these are, both in regard to the closeness of the vegetation and the variety of species, than the Silurian strata, especially the siliceous limestone which prevails here. The ground formed by its products of denudation may be for large expanses entirely, or almost entirely, without vegetation, at any rate as far as the higher plants are concerned; mosses were of rare occurrence, and the lichens also sparse.

Among the new contributions to the list of the Ellesmere Land phanerogams met with this summer, *Chrysosplenium tetrandrum* is entitled to especial mention, as it has never been found anywhere in Greenland. *Saxifraga Hirculus*, first met with in Framfjord, was quite common farther west, along Jones Sound. This species, in Greenland, is confined to the northern parts of the east coast. *Chrysosplenium* was found in Havnefjord, at the base of cliffs on which the glaucous gull nested. On ledges higher up two other species had their only habitat in Ellesmere Land, namely, *Ranunculus affinis* and *Arnica alpina*. Other new 'finds' were: *Saxifraga aizoides*, *Ranunculus Sabinei*, *Armeria ciliata* var. *humifusa*, *Alsine Rossii*, *Carex capillaris*, *C. ustulata*, *C. pedata*, *C. rupestris*, *Kobresia caricina*. As far as I am

able to judge for the present, the collections are furthermore increased by a number of cryptogams which have not been found before.

On August 9 we left winter quarters, and steered west. On the 11th a short visit was made to the coast of North Devon, where, however, I was only able to visit one place—a low peninsula entirely formed of limestone rocks and their débris. It consequently sustained a very meagre vegetation, and only nineteen species of phanerogams were observed; some cryptogams were, however, collected.

An attempt to sail farther north-west after passing through Cardigan Strait led to our being beset in the ice, and it was only after we had been detained a month, thus losing a considerable part of the short working season, that we got free and went into winter quarters in Gaasefjord. After our arrival there I made a collection of lichens, and I had also an opportunity of doing some dredging before the fjord was covered with ice. The result, however, was little enough, for the bottom consisted chiefly of mud, on which grew hardly anything except *Phyllophora interrupta*.

Earlier in the summer Herr Bay had now and again dredged in Havnefjord, and had handed over to me the sea-weeds he had found on those occasions. But as the bottom even there was unsuited for the growth of algæ, the botanical result was very small. I therefore thought my time would be better spent on land-excursions than in dredging, which, as far as I was concerned, was almost a waste of time.

The third winter was characterized, particularly near our winter quarters, by almost continuous wind, which made it exceedingly unpleasant, and often quite impossible, to go ashore. In addition to this, the country round our winter quarters was poor in vegetation, and consequently the winter observations were still fewer than the previous year. Even the observations of radiated heat were very incomplete, as thermometers *in vacuo*—absolutely necessary instruments for carrying out the observations—were not included in the equipment of the expedition. The summer of 1901 began very late; June 18 was the first day with a mean temperature above 0° Cent., and, consequently, all plants were extremely late in showing signs of life. It was not till June 22 that *Saxifraga oppositifolia* was found in blossom near our winter quarters, but Herr Schei saw it in bloom on the west coast on the 15th. Only one other species, *Draba hirta*, came into flower before the end of the month.

On June 24 I started with Herr Bay on a dredging-expedition, which, though calculated only to last a fortnight, took us a whole month. During this time we visited several points on the coast of Ellesmere Land, from the mouth of Gaasefjord, up through Hell Gate, to Nordstrand. We dredged at most of the stations, and also made short excursions

inland ; but the results were less than I had hoped, partly because the flora was exceedingly poor, and partly because a disproportionately long time was taken up in rowing from place to place with the heavy, deeply-laden boat. Among the algæ, of which the vegetation appeared mainly to consist, may be named : *Laminaria*, *Alaria*, *Phyllophora interrupta*, *Halosaccion* sp., *Chaetomorpha* sp. Other species were only found in solitary individuals, except where *Lithothamnium* were common. These, however, according to Conservator Foslie, who has the calciferous algæ for determination, belong to only a few species. At a couple of places I also found *Lithothamnium* in great numbers, in a sub-fossilized condition, together with the ordinary sub-fossilized shells, *Saxicava rugosa*, *Mya truncata*, etc.

The northern part of North Kent was also visited during this boating trip, the entire harvest of phanerogams from there amounting to twenty-four species. A number of cryptogams were also collected.

After our return to Gaasefjord I visited two bird-rocks at the outer part of the fjord, and found, particularly on one at Ytre Eide, a very vigorous phanerogamous vegetation, which, however, was not very varied in species. In addition to this was a thick carpet of mosses, among them *Bryum capillare* a foot deep.* The collection of cryptogams may possibly contain one or two things of interest. On July 22 I returned on board, after which short excursions were made in our immediate neighbourhood, where, however, there was little of interest to be found. Notwithstanding that a rather low temperature set in as early as August 12 and that a sheet of snow of some thickness for a time covered the ground, it was possible to continue the excursions until the beginning of September.

As we were unable to get out of the fjord that autumn, we were forced to remain another winter there, of which, in this connection, there is nothing to be said.

In the spring of 1902 I had an opportunity of going a journey up the west coast into Baumann Fjord. It was, however, still too early (the end of May and beginning of June) to make very comprehensive observations or collections, the ground being still covered with snow. The chief result, therefore, came to consist of Tertiary plant-fossils, which were found in large quantities in an interior fjord-branch.

The summer began earlier this year than the two previous ones, and was unusually warm. *Saxifraga oppositifolia* showed its first blooms on June 7, and before the end of the month twenty-five species were seen in flower, a greater number than in either of the preceding years at the same time.

* This moss, like *Sphagnum* and others, is used by the Eskimo as wicks for their train-oil lamps.

It had been my intention to start dredging as early as possible in the year, and to try to get back in time for land excursions along the outer and as yet little investigated part of Gaasefjord and Hvalrosfjord. But as I could not have the boat and crew before July 7, and as then unforeseen circumstances prolonged our boat-journey to the beginning of August, the collections of land vegetation made during the last summer amount to very little.

On our boat trip this time we visited the little island of Borgen, where I found only eleven kinds of phanerogams; besides which were mosses, lichens, and freshwater algæ, cryptogams being somewhat better represented. Our next station was Cape Vera, on the coast of North Devon, where the vegetation on the low strip of shore, in spite of its limestone formation, was, if not very varied, yet extremely abundant, resulting from the rich soil under the cliffs, which were inhabited by many thousands of birds. I saw here, for the first time, red snow in considerable quantities, and took specimens of it.

We followed hence the coast of North Devon up to the north side of Norfolk Inlet, where, for more than a week, we were imprisoned by ice on a little island, and only with difficulty succeeded in making good a retreat to the coast of Ellesmere Land. We dredged at all the stations during this expedition until we were compelled to devote our time exclusively to rowing back. The last day, however, I succeeded in acquiring a new species for Ellesmere Land, namely, *Dupontia Fisheri*. Of sea-weeds I collected a great quantity, though of not many different species; a few, possibly, were not among the collections of the previous years.

After leaving Gaasefjord, on the morning of August 6, we entered Havnefjord the following day, and anchored at our old winter quarters. Although we lay there about a day and a half, I was, unfortunately, only able to make a short trip ashore. I collected a little, chiefly grasses, which were unusually tall and abundant that year. I also brought back some living plants, which crossed the Atlantic in safety, and are now planted in the Botanical Gardens at Christiania.

The specific names used in the foregoing are those to be found in the usual botanical manuals, in particular Lange's 'Conspectus Floræ grønlandicæ.' Criticism of names, as well as of classification, are deferred until it is possible to publish more detailed accounts.

I have chiefly occupied myself in the foregoing with the contributions to our knowledge of the vascular plants of these tracts, as acquired by the expedition. Besides this, however, I endeavoured to make as many observations as possible as to the composition of the vegetation in various places, its conditions of life, and the like. It is difficult, however, to give a short summary of these results, and I think it

better to refrain from the attempt. Of the collections of cryptogams, too, very little has been said, as I have not been able to make any definite classification of them. The work done in different parts may be briefly summarized as follows :—

- (1) Collections and occasional observations made in Danish Greenland, 1898.
- (2) Observations and collections made in Foulke Fjord, North-west Greenland, August, 1898, and August, 1899.
- (3) Miscellaneous botanical work in Ellesmere Land, 1898–1902 ; exploration of the Hayes Sound district, 1898–1899 ; examinations on the south coast, 1899–1902, from Framfjord westward, and also on the west coast into Baumann Fjord ; observations of vegetation in various localities ; lists of species from most of the places visited ; series of temperature-observations, etc.
- (4) Excursions in North Devon, 1900 and 1902.
- (5) Excursions in North Kent and on the other and smaller islands at the western end of Jones Sound, 1901–1902.
- (6) Smaller collections of miscellaneous plants brought back from the west coast of Ellesmere Land, and also from more western countries by some of the sledge-expeditions.

The following table is intended to give some idea of the material contained in the collections :—

	Phanerogams.	Vascular cryptogams.	Mosses.	Sea-weeds.	Freshwater algæ.	Lichens.	Fungi.	Total.
Danish West Greenland	65	2	16	32	6	2	2	125
North-west Greenland	126	4	70	20	16	10	6	252
Ellesmere Land . . .	854	32	1433	156	199	656	56	3386
North Devon and other places	33	—	153	—	35	80	—	301
Total	1078	38	1672	208	256	748	64	4064

The above figures indicate the totals of numbers in the catalogue of collections, but in many cases lower cryptogams of several different species will be found mixed under the same number, while many parasitic fungi can still be found on the higher plants, and, furthermore, about two hundred numbers are not included in the table. It may, therefore, be said with certainty that the aggregate of numbers in the catalogue will reach five thousand ; this, presuming each head to

comprise ten specimens (and the mosses will doubtless bring the average well up to this), should make a further aggregate of fifty thousand specimens. This result of the botanical work of the expedition, with my notes on species from localities where they were not collected, will, I hope, give a somewhat clear idea of the vegetation of Ellesmere Land, and of the other tracts visited by us. For the present the number of vascular plants in the flora of Ellesmere Land may be estimated at approximately one hundred, exclusive of species noted by Hart, but which I did not find again. It is, as yet, impossible to form any reliable opinion in regard to the number of lower plants, but probably the aggregate number of species will at least reach four hundred.

In conclusion, it may be mentioned that I have in the main completed my determination of the phanerogamæ, and that later I shall work out the vegetation, etc., as well as the sea-weeds, possibly also some of the freshwater algæ. The rest of the material is being worked out by the following botanists : Mosses by Dr. Bryhn ; calciferous algæ by Conservator Foslie ; Lichens by Professor Darbishire ; fungi by Professor Rostrup. For a small collection of drift-wood which I also brought home no specialist has yet been found.

III.

ANIMAL LIFE IN KING OSCAR LAND, AND THE NEIGHBOURING TRACTS.

By E. BAY.

As soon as land is approached the first representatives of higher animal life are met with. These are the walruses and the different kinds of seal, which are to be seen sometimes lying on the drifting floes, sometimes thrusting up their heads from the water. The former often lie in most imposing heaps—perfect ‘meatbergs’—and are mines of wealth as food for the dogs during the winter. The seals are to be met with lying on the ice as early as the month of March. There are several species of them, of which, however, two are far more common than the other kinds. These are the bearded seal (*Phoca barbata*) and the ringed seal (*Ph. fœtida*); they are generally to be seen lying on the unbroken ice during the spring and early summer. When the ice breaks up, the saddle-back or harp seal (*Ph. greenlandica*) is occasionally met with, although the badder-nose (*Cystophora cristata*) and the common seal (*Ph. vitulina*) are more general in these waters.

The Greenland whale (*Balœna mysticetus*) has long been exterminated in Hayes Sound, Jones Sound, and the adjoining sounds and fjords; but numerous bones near the old Eskimo houses tell that it flourished here before the whalers found their way through the ice and brought death and destruction with them. Now only two much smaller kinds of whale are to be seen, the narwhal (*Monodon monoceros*) and the white whale (*Beluga leucas*), which often appear in considerable numbers. Once or twice in particular large schools were seen of the latter handsome species.

Careful scanning and a little good luck will generally bring to view the sovereign of the ice, the polar bear (*Ursus maritimus*), in his own high person. With long firm steps he saunters along over the white covering of the sea, winding meanwhile to discover his prey or a possible danger. The bear is no longer so courageous as it used to be in days gone by. Long-range breech-loaders have inspired it with

respect, and in the daytime it generally keeps at a cautious distance. But at night it is sometimes quite another animal, and one which it is well to beware of.

Far out on the great masses of drifting ice the track of another animal, the Arctic fox (*Canis lagopus*), whose proper habitat, however, is the land, is also not infrequently seen. It was common in all the countries visited by the 'Fram,' and many of them were caught. Among those captured was not a single 'blue' one; all were in winter garb. In the summer there is, of course, enough food for the fox to live on, but what it lives on in the winter has always been a riddle to me, for of those we caught the stomach was nearly always entirely empty. It can hardly be called a dainty eater, and we occasionally had visits from them at the ship's side in the quiet of the winter night.

Of the land-animals proper the musk-ox (*Ovibos moschatus*) was naturally the one which interested us most during the expedition, partly on account of the sport which shooting it afforded us, and partly on account of its excellent meat. I will not enter here upon its great courage and splendid mode of defence. In the text of this book the subject will often be touched upon, and it is sufficient for me to say that the musk-ox is pre-eminently the noblest game of the polar lands. The calves are born probably about the end of April, and this is undoubtedly the time when the wolf is most dangerous to these animals. Their food consists all the year round of grass and other phanerogams, which they scrape from under the comparatively thin sheet of snow.

The other ruminant of the polar regions, the reindeer (*Rangifer tarandus*), was not nearly so common as the musk-ox. Their cast antlers, however, were frequently seen on the land adjacent to Hayes Sound, though the animal itself was never observed there. Single animals or small herds were, however, met with here and there in King Oscar Land, and the countries and islands west of it. It is without doubt on account of the wolf, which with its great staying power tires it out and at last overtakes it, that the reindeer is not found in greater numbers.

Wheresoever the large valleys open out into the fjords, and where the vegetation is rather more plentiful, there the handsome white Arctic hare (*Lepus glacialis*) is certain to be found; often in quite large numbers; indeed, I may say, in absolute flocks. Its behaviour varies much; as sometimes it will allow one to approach quite near to it, while at others it is a matter of difficulty even to come within reasonable rifle range. Its movements are very remarkable, as it habitually rises upon its hind-legs and covers long distances on them, sometimes hopping and sometimes running.

The other rodent of these lands, the lemming (*Myodes torquatus*),

leads a much more retiring life, though every moment traces of it were to be seen. It is eagerly pursued by both birds and beasts of prey, so that it is not without reason that it tries to make itself as little noticeable as possible. It has two different garbs, a dark summer dress, and a light, longer-haired winter one.

The most noxious animal of these regions is the wolf. It is the terror of all the game except the musk-ox and the bear, and its presence alone is enough to drive away reindeer, foxes, and hares. The latter are no doubt its chief food. A number of musk-oxen are also destroyed by it every year; but on the whole these animals understand so well how to defend themselves that the old bulls must be a greater source of danger to the wolf than the wolf is to them. There is no doubt that in the winter the wolves are often sharp-set, and then they become somewhat less cautious than at other times, but we never saw any sign that they would attack people.

The ermine (*Mustela erminea*) was found everywhere; but, like the lemming, it is comparatively seldom seen. Several specimens, however, were shot during the course of the expedition.

There is still, perhaps, another animal of prey to be found in these tracts, the glutton (*Gulo luscus*). It is a more southerly and westerly form, and its tracks, or the animal itself, were not with certainty observed east of Crown Prince Gustav Sea.

Of land-birds only a few were observed. The gyrfalcon (*Falco gyrfalco*) was met with at several places, and several of them were shot. The snowy owl (*Nyctea nivea*) was less common, but was seen now and again. It was even more shy than the gyrfalcon, and we never succeeded in shooting one. The raven (*Corvus corax*) was frequently seen, and was also observed in circumstances which would lead one to suppose it to be nesting. It was in every way more shy than, for instance, in Greenland, and only one was shot. The raven is the scavenger of the polar regions, and will eat anything and everything; but it is only when in extreme want that it will touch bear-liver.

The only singing-bird of these barren climes is the snow-bunting (*Plectrophanes nivalis*). In other places, perhaps, its song might seem very humble, but here it is appreciated to the full, and it is welcomed with great pleasure on its return in the spring, at the end of March or beginning of April. Doubtless it is often in want of food at this time, but it always looks as happy and cheerful as possible. In October it goes south again.

The ptarmigan (*Lagopus mutus*) is common. It is to be found in these countries all the year round, but in the winter many certainly migrate south, although they may come back again early. They are then met with in packs of thirty or forty, and are often rather wild.

Later on they go about in pairs, but in the autumn appear again in packs, as the broods remain long with their parents. At this time they are not at all wild, and it is easy to shoot the entire pack. Only the hens change colour, and become dark in the spring; with the exception of a few dark feathers on the crown of the head, the cocks retain their white winter garb, which, however, in the course of the summer becomes dirty, and consequently—by quite mechanical means—darker. The ptarmigan were most plentiful at Cape Rutherford, where in the autumn of 1898 three guns shot twenty-seven and a half brace in one day.

The sea-fowl were more numerous than the land-birds, both as regards species and individuals. It is they which bring life and turmoil to these barren coasts; their scream it is which fills the air, their presence which brings summer with it. A bird-life, however, such as is found in more southern latitudes, must not be expected here; though at certain places, as at Indre Eidet, in Gaasefjord, there was much to interest an ornithologist.

Most conspicuous are, perhaps, the gulls, of which there were several species. The largest of these, the glaucous gull (*Larus glaucus*), was also the commonest. It breeds on steep cliffs in companies of up to twenty pairs. A rather smaller species, the herring gull (*L. argentatus*), often breeds at the same place with them. Both these gulls come at about the same time—in the latter half of May—and remain as long as there is open water; two of them were seen on October 30, 1899. The ivory gull (*Pagophila eburnea*) was often seen, and probably bred up there, though its nest was never found. The fourth kind, the kittiwake (*Rissa tridactyla*), was not common, but was seen now and then. Skuas were occasionally seen, and one species in particular, the long-tailed skua (*Lestris longicaudata*), was common, and was found breeding on several occasions. Its eggs were once found lying in a pool of water, and, this notwithstanding, were quite warm, so it must be assumed that the bird was sitting on them there.

A very common bird was the Arctic tern (*Sterna macrura*), whose piercing scream was everywhere heard in the summer months. It generally bred in colonies, and kept strict watch and ward round its nests, attacking without discrimination gulls, skuas, and men. More than once it happened that these hot-tempered little birds actually flew down on to our heads.

One of the first birds of passage to come to the heads of the fjords in spring was the brent goose (*Bernicla brenta*), which began to arrive at the end of May. In the very unfavourable spring of 1901 these birds must have suffered great privation, as they arrived long

before there was any open water; even, indeed, before the thaw had set in. Their nests were found on islets in the sea or rivers, and on the great plains. Every year there were large numbers of these geese which did not breed, probably young birds of the previous year. Later in the summer these birds lost their flight feathers, and for a time were unable to fly. At the same time those which had young ones were able to fly perfectly well, and did not show the slightest sign of losing their power of flight. I once observed something similar to this in the bernicle goose (*Bernicla leucopsis*) on the east coast of Greenland. The brent geese leave in the autumn as soon as the fjords begin to freeze over.

The eider-duck (*Somateria mollissima*) is to be seen everywhere on these coasts as soon as there are splits in the ice in the spring. Its food consists mainly of the prickly and little attractive sea-urchin. The nests are sometimes found singly, scattered about on the shore, sometimes on islets in the rivers (now and then far up the valleys), and sometimes on the small islands. Thus numerous eiders breed on St. Helena and Djævelöen, which were the only bird-islands met with by the expedition. The eiders remain in the autumn as long as there is the smallest amount of open water. This is partly because the broods do not begin to fly until very late in the season. Eider-duck were seen as late as October 17, 1901, in a creek at Ytre Eidet in Hvalrosfjord. Somewhat less common than the ordinary eider, but still very frequently to be met with, was the king eider (*Somateria spectabilis*), the nests of which, however, were never found, although it must certainly breed in these parts, as it was seen about the whole summer. Still another kind of duck, the long-tailed duck (*Harelda glacialis*), was common, and its nest was often found near freshwater lakes.

Now and then was heard and seen a red-throated diver (*Colymbus septentrionalis*), but this bird was not common. It was shot twice, both times in Gaasefjord.

Among the wading birds were a certain number of sandpipers, of which the knot (*Tringa canutus*) was the most noteworthy. It bred, among other places, at the head of Gaasefjord, where its young were found when quite small, though unfortunately no eggs were found. Of other waders may be mentioned the turnstone (*Streptopelia interpres*), which was very common in the summer.

Of guillemots were: the little auk (*Arctica alle*), Brünnich's guillemot (*Uria arctica*), and the black guillemot (*U. grylle*). The former was commonest in Kane Basin, where numbers of them were shot on several occasions. In Jones Sound, however, this bird was very uncommon, even if it was really seen at all. Brünnich's guillemot was most common in the neighbourhood of Cobourg Island, where it certainly nests; otherwise it was not often seen. The black guillemot was everywhere

common, though less so at the heads of the fjords, and was sometimes seen in myriads. It was found nesting in many places amidst old heaps of stones, and was an important provider of food on our summer boating excursions.

Mention must be made of one more bird, namely, the fulmar, or 'mollymoke' (*Fulmarus glacialis*), the bird of the fog and drifting ice. It was found everywhere, and sometimes was seen very early in the spring. At Cape Vera it appeared in numbers, in circumstances which would lead one to suppose almost with certainty that it was nesting there.

Both the sea and the fresh water were poor in fish. A certain number of sea-scorpions (*Cottus*) were taken, and a species of *Liparis* was also very common. I must also mention that the young of the wolf-fish (*Cyclopterus*) were once or twice caught. Although there were numerous freshwater lakes, we only once caught a salmon, and then it was not more than an inch in length. To which of the many varieties or species it belonged has not been determined. It was found in a river on the north coast of North Devon, exactly opposite Djævelöen.

Considerably more prolific was the insect life. On the patches of herbage, notably those with a south aspect, on still sunshiny days in the months of June, July, and August, there was rich insect life, both as regards species and individuals. The best collections were made in Jones Sound, and at winter quarters in Rice Strait. Fewer were found in the fjords off Jones Sound, and this was chiefly the case in Gaasefjord, where the keen, cold, north winds kept back the insects very much. However, there was a great difference between the two summers we spent there. The summer of 1901 was exceedingly unfavourable, and the insects quite failed, whereas the following year they were so numerous that it reminded one of Hayes Sound.

Four species of butterflies and some moths were found. A few wasps were also collected, and it is to be supposed that an entomological specialist would have found many more. Of humble-bees two species were found, of which one was of quite respectable size. A little *Podura* (spring-tail) was exceedingly common under the stones and among close vegetation. Most conspicuous, however, were the *Diptera* (flies), of which many species were found. A large bluebottle was the first insect to show itself in the spring. One or two of them were generally to be seen flying about by the ship's side, and on the refuse-heap, in the latter half of May, although the temperature at that time was considerably under freezing-point. Mosquitoes were common, though they did not appear in such myriads as, for instance, on the coasts of Greenland. Large craneflies were frequently seen.

Spiders (seven species, among them two new ones) appeared early in the summer, and were everywhere seen, amid the close, low vegetation.

In the sea swarmed countless numbers of lower animals. The specimens of these are not yet determined, and even were further particulars given, they would be only a dull string of names. On the other hand, some further mention of the dredging, by means of which the animals were caught, may be not out of place.

While wintering in Rice Strait, dredging was usually carried on in the harbour itself, where the outcome was always very much the same, as the bottom consisted chiefly of clay. A good deal of dredging, however, was done in Havnefjord in the spring of 1900. The fjord, which was about one hundred and fifty metres, or eighty-two fathoms, in depth, contained at its outer part, where the water was shallower, rich and varied animal life, whereas the deeper water at the inner part was much less prolific.

In the summers of 1901 and 1902 we dredged in the western part of Jones Sound with particularly good results. In the former year Hell Gate was especially worked over, but the violent current there made dredging very difficult. The best yield was at the northern outlet of the sound. In the summer of 1902 we dredged along the north coast of North Devon, from Cape Vera to Djæveløen. During the latter part of the boat journey, which we made for the purpose of dredging, all work was rendered impossible by the close drift-ice.

IV.

SUMMARY OF THE METEOROLOGICAL OBSERVATIONS.*

By HERMAN G. SIMMONS.

HAVING been asked by Captain Sverdrup to contribute a statement of the results of our meteorological observations, I will endeavour to do so to the best of my ability, though it must be borne in mind that I am not a specialist.

That particular prominence is accorded to the temperature observations is partly because readers in general are perhaps more interested in this than other phenomena, and also because I have not had time to work out other summaries and averages than the following, which, for the greater part, were done during the expedition itself.

The plan of the observations should, perhaps, first be explained. When under way, readings of barometric pressure, temperature of the atmosphere, humidity of the air (measured with a psychrometer-thermometer), temperature of the surface of the sea, velocity and directions of the wind, directions of the drift of the clouds, nature and amount of the clouds and precipitation, were taken every four hours. To these were added the particulars necessary for correction when they were not entered in the ship's journal. In harbour the observations were taken at intervals of two hours. Additional observations were made of the humidity of the air with the hair-hygrometer, and the precipitation measured; when here, too, appliances for registering the pressure of the atmosphere and the temperature were also put up. The maximum and minimum thermometers were read morning and evening. The greater number of these series of observations should be tolerably complete, notwithstanding the short breaks which occur now and again, caused by the absence of the observer, or for some other reason. Greater intervals occur in the readings of the psychrometer-thermometer, as at a very few degrees below 0° Cent. it gave quite useless indications, a fact which has already been noted by previous polar expeditions, and also in the registration of temperatures with the thermograph, as its clockwork stopped at low degrees or sudden variations of temperature.

In the following, particulars are given of each year, reckoning from summer to summer.

* From the Swedish.

1898-1899.

As soon as we had gone into harbour, at the end of August, the weather began to be wintery, the ground was covered with snow, and the temperature always under 0° Cent.

TEMPERATURES.

	Max.	Min.	Mean.
	Cent.	Cent.	Cent.
September	- 1.0°	- 15.0°	- 8.28°
October	- 2.2°	- 29.1°	- 15.34°
November	- 14.5°	- 35.2°	- 28.26°
December	- 16.6°	- 38.0°	- 31.96°
January	- 20.9°	- 42.8°	- 33.56°
February	- 22.5°	- 40.4°	- 32.31°
March	- 14.5°	- 41.7°	- 31.34°
April	- 7.0°	- 34.7°	- 20.67°
May, 1st half	2.6°	- 25.6°	- 12.68°
„ 2nd „			- 4.29°
June, 1st half	9.5°	- 5.1°	1.32°
„ 2nd „			2.08°
July, 1st half	9.5°	- 1.5°	3.05°
„ 2nd „			3.10°

It will be seen that figures are wanting for the month of August, this month for the greater part having been spent under way. It would, however, hardly be too high an estimate to put the mean temperature in Frams Havn for the month at 1.0° to 1.5° Cent., which gives a mean for the year of about -17° Cent. The maximum for the year, 9.5° Cent., was reached several times in June and July, and the minimum for the year, -42.8° Cent., in January. On May 13 the temperature rose again for the first time to 0° Cent.; negative temperatures, however, were not rare even after summer set in, and it was only during the latter half of July that none were recorded.

WIND.

	Calm.	Light Wind.	Stronger Wind.	Collective Winds.	Highest Velocity.	Direction.
September	2	6	22	28	11.2	N.W.
October	0	7	24	31	18.8	S.
November	5	13	12	25	13.5	S.S.W.
December	5	15	11	26	7.5	N.N.W.
January	1	7	23	30	9.7	N.
February	5	7	16	23	10.0	S.W.
March	1	12	18	30	8.8	N.
April	2	13	15	28	7.5	N.E.
May	0	10	21	31	14.2	S.W.
June	1	6	23	29	13.2	S.W.
July	1	8	22	30	13.2	S.W.
September-July.	23	104	207	311	18.8	S.

In the first four columns of the table are given the number of days when the weather was calm and when there was wind. As days with light wind are reckoned those when only solitary observations gave a velocity of 3 mètres in the second, or slightly more.

The fifth and sixth columns show the highest velocity observed in mètres per second, and the directions of the wind. As will be seen by the table, the stronger winds were always southerly. The 104 days, however, on which slight wind is recorded, might almost be included with the calm days, for often these light winds were entirely local. Days when the greater number of observations gave no wind, or occasional wind under 1 mètre per second, are recorded as calm.

CLOUDS.

	Days.				Days.		
	Clear.	Half-clear.	Over-cast.		Clear.	Half-clear.	Over-cast.
September . . .	6	7	17	April . . .	3	11	16
October . . .	1	9	21	May . . .	6	15	10
November . . .	7	15	8	June . . .	10	7	13
December . . .	17	13	1	July . . .	—	9	22
January . . .	14	14	3				
February . . .	6	19	3	Sept.-July .	80	137	117
March . . .	10	18	3				

Days which are recorded as clear are those on which only solitary observations showed a cloudiness of 1 or 2, half-clear indicates a preponderance of clouds 1-5, overcast a preponderance of 6-10. It will at once be seen that the clear days chiefly occur in the winter months.

PRECIPITATION.

		Days.	Precipitation in mm.			Days.	Precipitation in mm.
September . . .	9	—		April	13	13·6	
October	12	26·5		May	9	15·9	
November . . .	6	3·6		June	7	—	
December . . .	5	0·6		July	14	—	
January	7	0·9					
February	6	0·2		Sept.-July . .	92	62·3	
March	4	1·0					

As days of precipitation are also reckoned those when there was mist or when occasional snow-flakes fell; this in a measure explains the

small amount of precipitation in comparison with the number of days. Often the amount of snow or water in the gauge was too small to be measured, and not seldom it must have evaporated before the measurement could take place. In the months where the figures for precipitation are omitted, no gaugings were taken during the month. Even had a complete figure for the whole year been obtained, it would be very low.

Of the other series of observations I have not worked out summaries; but if done they would hardly be in their place here.

1899-1900.

TEMPERATURES.

	Max.	Min.	Mean.
	Cent.	Cent.	Cent.
September	4.6°	-13.7°	- 3.41°
October	- 5.3°	-29.0°	-18.44°
November	-11.4°	-37.3°	-26.47°
December	- 1.5°	-41.1°	-28.00°
January	-15.4°	-48.7°	-31.81°
February	1.8°	-42.9°	-22.14°
March	-10.1°	-44.8°	-27.50°
April	- 6.3°	-38.4°	-21.37°
May	1.6°	-19.7°	- 8.22°
June, 1st half	6.7°	- 5.2°	0.79°
„ 2nd „	12.2°	- 4.7°	2.77°
July, 1st half	9.1°	- 1.0°	2.97°
„ 2nd „	10.8°	- 1.4°	3.34°

For this year also figures are wanting for the month of August at winter quarters. The first week of the month, which was spent there, was very warm, but after we left we soon had very low temperatures. Still, the mean temperature might well be about that of June or a little higher. The year's average would thus be -15.25° Cent., an abnormally high figure, which was in great measure occasioned by the unusually mild weather of December and February. During both these months (and to a less degree also at other times) we had periods of strong southerly winds causing the temperature to rise unusually high. On February 9 and 12 positive temperature was reached several times, and the mean for the first half of the month was -13.34° Cent. This can only be described as abnormal; but a rise of temperature in February with a subsequent fall in the first half of March was, as will be seen by the appended tables, a yearly recurring phenomenon, which I cannot pretend to explain. A chance occurrence it cannot have been, as it happened four years in succession.

The absolute maximum for the year was 12.2° Cent., occurring on June 27; the absolute minimum, -48.7° Cent., in January (17th), as usual.

WINDS.

The local conditions affecting the direction and force of the wind had even greater influence in Havnefjord than in Frams Havn. At our place of anchorage it generally took the form of squalls from the surrounding mountains, irrespective of the prevailing wind outside.

WIND.

	Calm.	Light Wind.	Stronger Wind.	Collective Winds.	Highest Velocity.	Direction.
September . . .	13	12	5	17	9.4	S.E.
October . . .	25	3	3	6	10.2	N.
November . . .	22	3	5	8	14.2	S.E.
December . . .	21	5	5	10	9.0	E.
January . . .	29	1	1	2	6.0	W.
February . . .	13	2	13	15	14.0	N.E.
March . . .	21	3	7	10	12.5	N.E.
April . . .	19	5	6	11	14.7	N.E.
May . . .	14	6	11	17	16.5	N.E.
June . . .	9	12	9	21	7.8	S.E.
July . . .	4	10	17	27	15.0	S.
September-July.	190	62	82	144	16.5	N.E.

The wind directions given in the table are those which prevailed at our place of anchorage at the moment of taking the observation, and this seldom agreed with the direction of the wind outside the fjord. A N.E. wind is thus often a S.E. wind, or nearly so, thrown back from the mountains.

CLOUDS.

	Days.				Days.		
	Clear.	Half-clear.	Over-cast.		Clear.	Half-clear.	Over-cast.
September . . .	0	0	30	April . . .	3	8	19
October . . .	9	11	11	May . . .	5	4	22
November . . .	13	7	10	June . . .	3	7	20
December . . .	11	6	14	July . . .	3	4	24
January . . .	8	10	13				
February . . .	4	6	18	Sept.-July .	70	70	194
March . . .	11	7	13				

It will be seen that in comparison with the previous year the winter months also show a great number of overcast days, caused by the prevailing southerly winds.

PRECIPITATION.

	Days.		Days.
September	23	April	17
October	11	May	17
November	8	June	14
December	13	July	17
January	14		
February	16	September-July . . .	170
March	10		

Complete figures for precipitation from September to January are wanting. From February to May it amounted to 26·2 mm. The summer months were unusually rainy, June having 22·2 mm. and July 31·2 mm. The aggregate rainfall for these eight months was thus 79·6 mm.

1900-1901.

TEMPERATURES.

	First Half.			Second Half.			Monthly Mean.
	Max.	Min.	Mean.	Max.	Min.	Mean.	
	Cent.	Cent.	Cent.	Cent.	Cent.	Cent.	
September	—	—	—	— 5·2°	— 16·4°	— 11·61°	—
October . .	— 9·5°	— 27·8°	— 19·56°	— 3·0°	— 28·4°	— 15·81°	— 17·64°
November .	— 10·8°	— 36·8°	— 26·72°	— 9·2°	— 35·8°	— 27·15°	— 26·94°
December .	— 9·9°	— 35·0°	— 27·58°	— 18·0°	— 45·5°	— 39·53°	— 33·74°
January . .	— 23·0°	— 48·1°	— 38·17°	— 21·9°	— 51·0°	— 38·77°	— 38·48°
February . .	— 14·2°	— 47·3°	— 35·87°	— 8·0°	— 45·8°	— 32·23°	— 34·06°
March . . .	— 28·2°	— 46·1°	— 38·02°	— 12·8°	— 44·8°	— 31·91°	— 34·87°
April . . .	— 12·1°	— 39·0°	— 29·27°	— 9·4°	— 29·2°	— 21·09°	— 25·16°
May	— 5·8°	— 24·8°	— 14·99°	0·1°	— 21·0°	— 8·64°	— 11·71°
June	1·8°	— 9·2°	— 4·58°	8·0°	— 3·7°	1·31°	— 1·61°
July	11·5°	— 1·1°	3·75°	7·3°	— 1·7°	2·17°	2·94°
August . . .	5·2°	— 3·0°	1·43°	7·8°	— 7·1°	0·41°	0·91°
September	3·0°	— 12·3°	— 4·36°	—	—	—	— 8·25°

As will be seen from the table, this year was considerably colder than the preceding ones; the mean temperature for January being four or five degrees lower than that of the year before, and the rise in February, which again took place this year, considerably less. These low temperatures during the winter were doubtless to a certain extent local, for they were connected with the north wind which blew almost continuously down the fjord, and the stronger this was the lower sank the temperature. The absolute minimum, $-51·0^{\circ}$ Cent., however, occurred with wind of only 4-7 metres per second. The summer temperature was also unusually low, and it was not till June 18 that the mean temperature of the twenty-four hours rose above 0° Cent. Before the middle of August the frosts began again in earnest. The temperature of the first half of July was, however, higher than that of the

previous years. The maximum for the year, 11.5° Cent., was on July 14. The mean temperature for the year was about -19° Cent. Such a low average temperature is not known from any point in the whole of Arctic America, with the exception of Grinnell Land. For the sake of comparison it may be mentioned that the average temperature for the year at the pole of cold in Siberia (Werchojansk) is -17° Cent.

WINDS.

In one respect a similarity may be said to have existed between the winds at our winter quarters in Gaasefjord, 1900-1901, and in Havnefjord, inasmuch as their direction was chiefly influenced by local conditions. In Gaasefjord, which was narrow and ran almost north and south, the wind was always more or less compelled to follow the direction of the fjord. East winds merged more or less into south-easterly or southerly ones; west winds, when they came over the isthmus at the head of the fjord, or through Skrabedalen, became more or less northerly. I have, therefore, in the following, tabulated all winds as either north or south. The latter, however, are very often south-east, and it could plainly be seen by the drift of the clouds that a north wind outside the fjord became inside it north-west, west, or even south-west.

SUMMARY OF THE WIND OBSERVATIONS FROM OCTOBER 1, 1900, TO OCTOBER 1, 1901.

	Number of Days.			Number of Observations.		
	N.	S.	Calm.	Wind.	Calm.	In %.
October	20	11	0	275	92	75 + 25
November	23	7	0	304	55	85 + 15
December	25	4	2	263	104	72 + 28
January	25	5	1	293	78	79 + 21
February	20	6	2	224	110	67 + 33
March	23	6	2	263	108	71 + 29
April	21	9	0	265	91	74 + 26
May	17	14	0	324	45	88 + 12
June	19	11	0	304	53	85 + 15
July	27	4	0	333	37	90 + 10
August	17	14	0	297	70	81 + 19
September	25	4	1	302	57	84 + 16
	262	95	8	3447	900	4347
	72 %	26 %	2 %	79 %	21 %	

Twelve observations daily during a year should give a total of 4380 observations; of these, however, thirty-three are wanting, hence the number given of 4347.

The velocity of the wind for the whole year is as follows, expressed in mètres per second.

	Northerly.		Southerly.		Mean Velocity.
	Highest Velocity.	Mean Velocity.	Highest Velocity.	Mean Velocity.	Collective Observations.
October	16·7	2·9	20·0	6·2	4·1
November	15·3	5·4	13·1	4·7	5·3
December	13·0	4·5	11·0	3·2	4·0
January	17·0	6·7	11·6	3·2	5·9
February	17·2	5·1	24·4	6·9	5·1
March	19·8	6·1	12·2	2·2	4·9
April	12·0	3·8	12·1	4·0	3·8
May	15·2	4·2	17·0	5·3	4·7
June	12·4	4·3	16·6	5·1	4·6
July	12·2	3·3	14·7	5·3	3·5
August	9·8	3·7	13·8	2·3	3·0
September	14·6	4·1	22·5	7·2	4·4
October–September . .	19·8	4·5	24·4	4·6	4·4

Even the most cursory comparison with the previous particulars of the winds in Frams Havn and Havnefjord will show a great dissimilarity. In the latter place, in particular, perfectly calm days preponderated, and winds were the exception. Here the conditions were exactly reversed. A complete record of the winds, such as has formed the base of the summary given for 1900–1901, is wanting for these two years, but in order to get somewhat better points of comparison, I have made similar calculations for two months of each of these two years, choosing for the purpose January and July as on the whole the most extreme. The result of these calculations, which is given in the following table, shows that a certain similarity exists between the conditions in Frams Havn and Gaasefjord during the most pronounced winter month and the most typical month of summer, while Havnefjord, as far as winds are concerned, has very little in common with them.

Number of Days.			Number of Observations.		Velocity.					
					Northerly.		Southerly.			Mean for the Month.
N.	S.	Calm.	Wind.	Calm.	In %.	Highest.	Mean.	Highest.	Mean.	
Jan., 1899	28	2	1	295	77	79+21	9·7	2·1	9·5	2·0
„ 1900	0	2	29	10	362	3+97	—	—	6·0	0·04
„ 1901	25	5	1	293	78	79+21	17·0	6·7	11·6	5·9
July, 1899	6	25	0	258	57	82+18	12·6	1·8	13·2	3·8
„ 1900	6	22	3	161	210	43+57	4·8	0·5	15·0	1·6
„ 1901	27	4	0	333	37	90+10	12·2	3·3	14·7	3·5

In Havnefjord the month of January was almost entirely free from wind, and July was considerably calmer than in the other places. In both of these localities the wind in the former month was generally from the north, though with considerable difference as to strength. On the other hand, Gaasefjord stands alone for prevailing northerly winds in the month of July.

CLOUDS.

	Number of Days.				Number of Days.		
	Clear.	Half-clear.	Over-cast.		Clear.	Half-clear.	Over-cast.
October	0	6	25	May	2	5	24
November	5	15	10	June	0	4	26
December	14	13	4	July	1	3	27
January	8	19	4	August	1	1	29
February	5	12	11	September	0	6	24
March	8	13	10				
April	7	11	12	Oct.-Sept. . . .	51	108	206

PRECIPITATION.

	Number of Days.				Precipitation in mm.
	Snow.	Rain.	Mist.	Together.	
October	19	—	5	24	0.9
November	6	—	4	10	0.5
December	3	—	7	10	0.9
January	2	—	17	19	0.0
February	7	—	7	14	4.3
March	9	—	3	12	1.2
April	11	—	4	15	0.2
May	19	—	1	20	0.8
June	12	7	1	20	0.6
July	2	17	3	22	14.6
August	8	9	5	22	2.0
September	14	—	6	20	5.4
October-Sept. . . .	112	33	63	208	31.4

As will be seen by the above table, the precipitation was extraordinarily small, even presuming that the figures ought to be a little higher than they are here given; partly because the indications in the journal often have reference to exceedingly small quantities of precipitation, and partly because in such high winds as we had that year, evaporation rendered it impossible to count on finding at the time of measurement more than the precipitation of the last few hours. Moreover, I am inclined to think that only a very small proportion of the fine snow which falls during the winter, and which in any case gives very little water when melted, is collected in the gauge during high wind.

1901-1902.

TEMPERATURES.

	First Half.			Second Half.			Monthly Mean.
	Max.	Min.	Mean.	Max.	Min.	Mean.	
	Cent.	Cent.	Cent.	Cent.	Cent.	Cent.	Cent.
September	3·0°	-12·3°	- 4·36°	- 5·9°	-21·0°	-12·17°	- 8·25°
October .	-11·4°	-23·4°	-17·47°	-11·0°	-29·6°	-22·29°	-19·80°
November	- 8·0°	-30·2°	-20·63°	-13·5°	-35·2°	-28·95°	-24·85°
December	-18·6°	-37·7°	-29·01°	-22·2°	-37·2°	-30·72°	-29·85°
January .	-31·0°	-42·7°	-37·48°	-25·2°	-42·4°	-35·08°	-36·28°
February	-11·7°	-36·8°	-27·00°	-18·9°	-42·7°	-32·10°	-29·51°
March .	-32·5°	-43·8°	-39·19°	-13·9°	-44·9°	-29·22°	-34·08°
April . .	-21·9°	-35·4°	-29·70°	- 3·6°	-30·8°	-19·02°	-24·34°
May . .	6·0°	-23·0°	-14·01°	0·7°	-18·3°	- 8·84°	-11·89°
June . .	9·4°	- 5·0°	1·29°	12·0°	0·0°	3·71°	2·52°
July . .	13·3°	0·0°	5·61°	11·8°	- 0·1°	4·93°	5·27°

The most pronounced characteristic of the temperatures for this year is the unusually high figure for July, the temperature from the middle of June to the end of the former month only once falling as low as $-0\cdot1^{\circ}$ Cent. Like all the years except the preceding one, the observations are incomplete, the month of August being omitted. In order to get a mean for the year an average must be estimated for this month, and if it be put at $2\cdot0^{\circ}$ Cent., which seems to be a suitable figure, a mean temperature for the year of $-17\cdot4^{\circ}$ Cent is attained. The maximum of the year, $13\cdot3^{\circ}$ Cent., which occurred on July 9, was the highest temperature recorded at any time. The minimum for the year, $-44\cdot9^{\circ}$ Cent., was as late as on March 19.

WINDS.

Not having the journals for the whole year at my disposal, and, moreover, not being in possession of sufficient time to work out summaries of them, I must confine myself to a few particulars with regard to the wind and precipitation. We had not nearly so much nor such violent wind during the last year as in 1900-1901. This may have been partly because we had more sheltered winter quarters, for farther up the fjord it blew much and hard this winter also. Often when it was calm or only slightly windy with us we saw the snow on the west side of the fjord being whirled violently up and carried away by the north wind, which, however, could not touch us, who were lying under the lee of the high 'Gula Berget' (Yellow Mountain). Nevertheless southerly winds could and did reach us with their fullest force. On

March 25, with a south-west wind, we observed the greatest velocity noted on the whole voyage. A number of measurements showed between 25 and 28·5 mètres per second, and for one observation even 36·4 mètres per second are recorded.

The precipitation, like that of the previous year, was very small even for these tracts. I have not here all the figures extant, but may mention that for the period December 12, 1901—July 20, 1902, a precipitation of only 15·3 mm. is recorded. The month of July, which was comparatively rainy in 1901 (twenty-two days with precipitation, 14·6 mm.), had in 1902 only one day with a little rain and no other precipitation.

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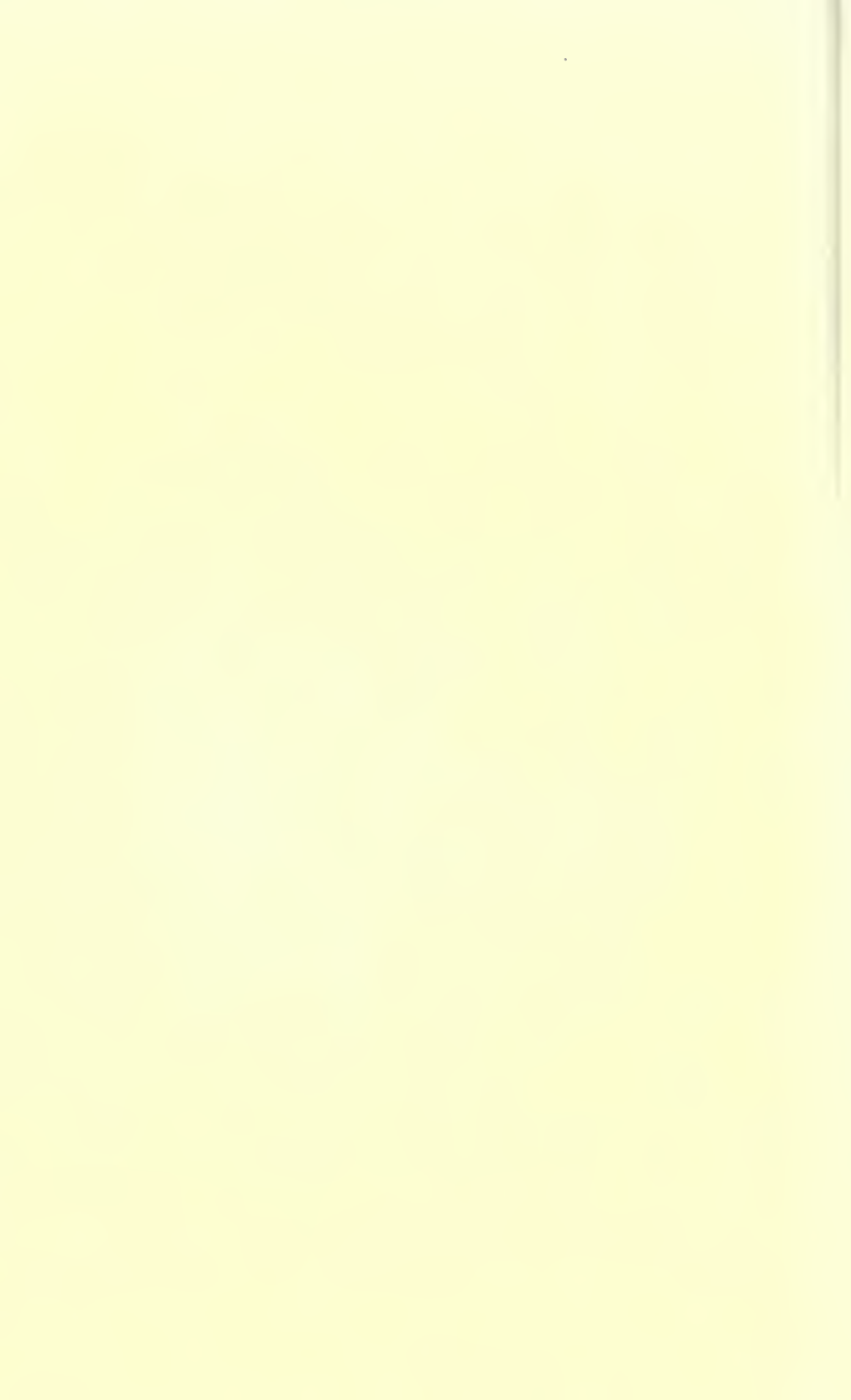
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